Coventry and Warwickshire

Smoking in Pregnancy Review

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On behalf of the Smoking in Pregnancy Task and Finish Group
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1. Introduction

1.1 Review Specification

This report details the findings of a 'Scoping Review' of smoking in pregnancy across Coventry and Warwickshire which was commissioned by Warwickshire County Council on behalf of the Local Maternity System (LMS) Board. The purpose of the review is to clarify the:

- Epidemiology of smoking in pregnancy across Coventry and Warwickshire
- Extent to which pregnant smokers have additional risk factors
- Current means by which smokers are identified, assessed, and provided with information and support
- Extent to which maternity and other providers/professionals meet NICE and related guidance aimed at reducing smoking in pregnancy
- Current models of service provided by the two specialist smoking in pregnancy services and the proportion of pregnant smokers who are referred to services
- Role of the Health Visitor service and the Family Nurse Partnership (FNP) service in providing advice/support during the ante-natal and post-natal periods (including preventing relapse)
- Barriers staff face in tackling smoking in pregnancy and opportunities to improve practice

The full specification for the review is enclosed in appendix 1. This confirms that the review was commissioned as phase 1 of a wider piece of work recognising that there would need to be further development work to strengthen stop smoking in pregnancy support across the LMS in light of the review findings.

1.2 Background: Smoking in Pregnancy

Smoking is the single largest modifiable risk factor for poor birth outcomes in pregnancy having a significant impact on a wide range of maternal and neonatal outcomes including stillbirth and infant mortality rates. Smoking during pregnancy is a major health inequality, with prevalence varying significantly across communities and social groups. Furthermore, given the impact of parental smoking on future household smoking patterns reducing smoking in pregnancy is considered fundamental to delivering the national aspiration of 'a smokefree generation'.[1]

A recent report from Public Health England (PHE)[2] has confirmed that in 2017 the average recorded prevalence of smoking at time of booking was 12.7% and indicates that overall 23.8% of women had stopped smoking before becoming pregnant while a further 6.7% had stopped when they found out they were pregnant. The report confirms that the prevalence of smoking in pregnancy is higher among disadvantaged groups, those aged under 20 and predominantly those from white ethnic groups. Furthermore, the lowest proportion of women who quit smoking during pregnancy were those from the most deprived population groups, reinforcing the inequalities associated with socio-economic deprivation.

The national prevalence of smoking in pregnancy is estimated from Smoking at Time of Delivery (SATOD) data that is routinely collected as part of the maternity data set. As SATOD is not validated through a Carbon Monoxide (CO) measurement it may not be wholly accurate, it is however the value used to monitor national progress and trends. The PHE report indicates that approximately 15% of women who were smoking at booking may have successfully quit smoking during pregnancy, but this estimate is based on comparing the prevalence of smoking at booking and at time of delivery among different cohorts of

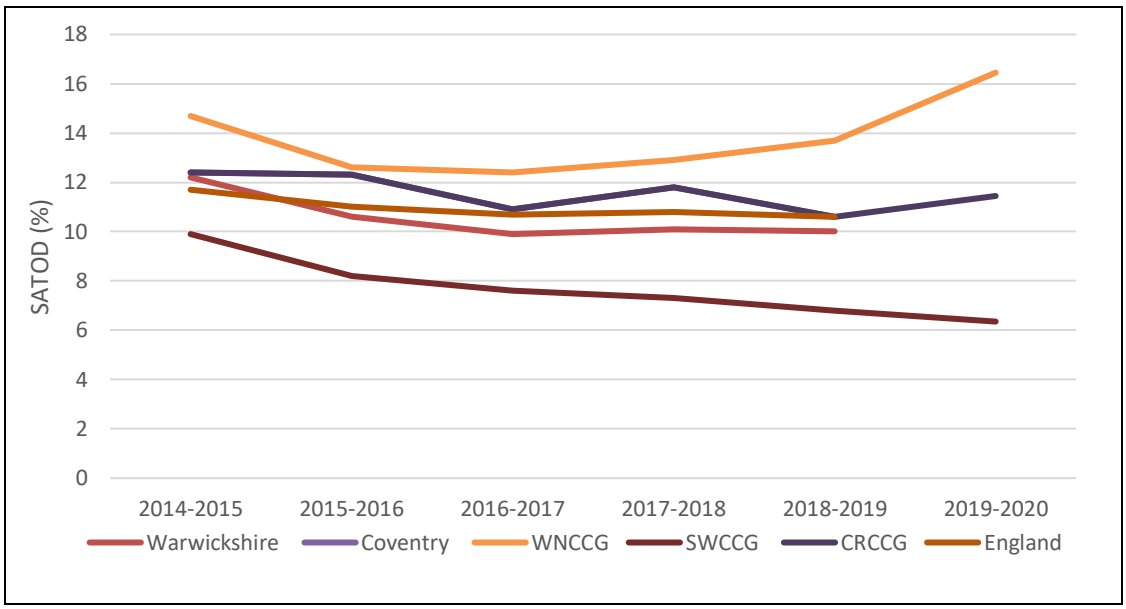
women; as such it can best be seen as a general indication of proportion of women who do manage quit during pregnancy.
Smoking in pregnancy, as measured through SATOD, has generally been declining over recent years both at a national and a local level as shown in Table 1.1.

Table 1.1. Smoking at Time of Delivery 2010/11 and 2018/19

Population	2010/11	2018/19
England	13.7% (13.6 to 13.7)	10.6% (10.5 to 10.7%)
Coventry	15.1% (14.1 to 16.1%)	10.6% (9.7 to 11.6%)
Warwickshire	16.7% (15.8 to 17.7%)	10% (9.2 to 10.8%)

However, reductions in SATOD over recent years have been more modest reflecting a stagnation in progress in reducing smoking in pregnancy, as shown in Figure 1.1. Further to an overall slowing in the rate of progress Figure 1.1 shows that far from declining, the SATOD rate for the WNCCG population has been steadily increasing since 2013. This is a worrying development that demands action.

Figure 1.1. Smoking at Time of Delivery 2014/15 to 2019/20



It is interesting to note that whilst the prevalence of smoking in pregnancy across England is generally declining the SATOD prevalence was 10.6% in 2018/19, the same rate as it was in 2015/16. Thus, smoking in pregnancy is unlike smoking prevalence in the general population, which has seen a reduction of 2.5% over the same time period.[3]

1.3 The Consequences of Smoking in Pregnancy

Smoking in pregnancy is associated with numerous adverse outcomes as illustrated in Table 1.2. It has been estimated to account for up to 2,200 premature births, 5,000 miscarriages and 300 perinatal deaths each year in the UK. In addition, it increases the risk of congenital malformations, respiratory conditions, gastrointestinal defects, obesity, and learning disabilities such as impaired general reasoning and verbal competence.[4]

Table 1.2. Smoking in Pregnancy Impacts of Smoking on Birth Outcomes

	Maternal Smoking	Second-hand Smoke Exposure
Low birth weight	Average 250g lighter	Average 30-40g lighter
Stillbirth	Double the likelihood	Increased risk
Miscarriage	24%-30% more likely	Possible increase
Preterm birth	27% more likely	Increased risk
Heart defects	50% more likely	Increased risk
Sudden Infant Death	3 times more likely	45% more likely

Source: Action on Smoking and Health. Smoking in pregnancy challenge group. Review of the Challenge 2018.

Table 1.3 summarises the impact that smoking in pregnancy can have across the life course, illustrating how failure to address the problem results in increased morbidity and costs throughout the system from before a child is born and throughout their lifetime.

Table 1.3. Impact of Smoking in Pregnancy Across the Life Course

Life stage	Additional burden
Prenatal	More complications in pregnancy and at birth Increased likelihood of miscarriage Increased likelihood of stillbirth
Postnatal	Increased risk of preterm and low birth weight babies Increased risk of Sudden Infant Death Syndrome
Infancy	Slower rates of development Increased likelihood of illness
Childhood	Increased likelihood of lower educational attainment Increased likelihood of illness
Adolescence	Increased likelihood of becoming a smoker
Early adulthood	More likely to smoke during pregnancy
Later adulthood	More likely to need health and social care services early

Source: Action on Smoking and Health. Smoking in pregnancy challenge group. Review of the Challenge 2015.

In addition to the risks posed directly through smoking, exposure to second-hand smoke during pregnancy is associated with many of the same adverse pregnancy outcomes.[5] Thus, the consequence of either smoking or exposure to second-hand smoke can reach far into childhood and further into adult life. These adverse outcomes generate substantial potentially avoidable costs, both in terms of managing the complications of pregnancy, the costs associated with caring for preterm and low birthweight babies, and the lifelong support required by those with cerebral palsy, learning disabilities or other long-term conditions that occur as a consequence of smoking in pregnancy.

KEY POINTS: The consequences of smoking in pregnancy

- **Smoking in pregnancy is associated with significant health risks to both mother and baby – including preterm birth, low birthweight and stillbirth.**
- **Its impact reaches into childhood and beyond continuing into the adult life of the child born to a smoker.**
- **Sudden infant death is three times more common among babies born to smokers**
- **Smoking drives health inequalities and failure to address smoking in pregnancy reinforces inequalities across generations**

1.4 Costs of Smoking in Pregnancy

The full financial consequences of smoking in pregnancy to the NHS, Social Care and the wider public sector are difficult to quantify, but given the broad impacts of smoking in pregnancy on outcomes the economic burden is substantial. A report published in 2010 estimated that NHS maternity costs associated with smoking in pregnancy could be as high as £64 million each year.[6] Alongside this the total annual cost to the NHS of managing the associated infant outcomes in the first year of life alone was estimated to be between £12 million - £23.5 million, with the majority of costs attributable to the care of low birth weight and preterm infants. Other analyses confirm additional costs associated with smoking in pregnancy in terms of maternity care[7] neonatal care and the cost of health care for children born to smokers over the first 5 years of their life (an additional £222 per child born to a smoker).[8]

A small but detailed audit of a random sample of smokers vs non-smokers was undertaken in Barnsley in 2018 through a retrospective review of case notes.[9] The audit explored differences in the maternity care provided to the two groups, as dictated by their needs, and differences in maternal and foetal outcomes. Table 1.4 summarises the key findings.

A small but detailed audit of a random sample of smokers vs non-smokers was undertaken in Barnsley in 2018 through a retrospective review of case notes.[9] The audit explored differences in the maternity care provided to the two groups, as dictated by their needs, and differences in maternal and fetal outcomes. Table 1.4 summarises the key findings.

Table 1.4. Audit of Maternity Interventions and Outcomes Smokers vs Non-smokers

Outcome or Intervention Required	Smokers n=10	Non-Smokers n=10
Average number of appointments	14.8	11
Average attendances at decision unit	3.3	1.3
Overnight antenatal admission	3	0
Average number of ultrasound scans	6.2	3.7
Reduced fetal movement	4	1
Postnatal Clexane prescribed	4	1
Complications in labour	6	3
Gestation <=37 weeks	4	1
Birthweight < 2.5kg	3	1
Complications affecting the baby	7	2
Breastfeeding	2	9

Whilst the costs associated with the two groups of women were not calculated it is clear that if these outcomes are typical of the care needs of smokers vs non-smokers, the cost of managing pregnancy and delivery among smokers far exceeds that of non-smokers. In an attempt to further illustrate the scale of the potential additional costs attributable to smoking in pregnancy across Coventry and Warwickshire national estimates of the impact of smoking in pregnancy in terms of preterm births has been applied to local data as shown in appendix 2. This indicates that 53 babies are born preterm per year because of smoking, as opposed to other causes. A modest estimate of the annual cost of providing neonatal care for these babies is approximately £1million. This does not take into account the additional costs associated with managing the complications of pregnancy and childbirth or the costs of health care beyond the neonatal period, which are also known to be increased.

An alternative and more inclusive approach to estimating the cost of preterm births due to smoking is shown in Table 1.5. This is based on cost estimates included in the 2012 Chief Medical Officers (CMO) report[10] which focused on prevention and included the cost-consequences of failing to prevent preterm births.

Table 1.5. Estimated Additional Costs Associated with an Annual Cohort of Preterm Births Caused by Smoking

	Mean additional cost	Total estimate for 53 preterm births 2012 costs	Costs Uplifted for inflation to 2020/21
Delivery of preterm infant	£360	£19,080	£23,250
Neonatal care	£24,000	£1.3m	£1.6m
Health costs discharge to age 2	£1000	£53,000	£64,500
Societal costs up to 18 years	£51,656	£2.8m	£3.4m

The costs in Table 1.5 were uplifted for inflation based on NHS guidance[11] that indicates annual inflation to be between 2% and 3.1%. Therefore, an annual inflation figure of 2.5% has been applied to the cost estimates published by the CMO in 2012 to provide a more realistic estimate of the current (2020/21) cost-consequences of preterm births attributable to smoking across Coventry and Warwickshire. These estimates align with other information, such as the additional complications for smokers during delivery and the impacts of smoking in terms of increased risk of cerebral palsy and increased educational support needs. It is therefore reasonable to assume that the additional societal costs of an annual cohort of preterm babies due to smoking in pregnancy is £3.4m. On this basis the case for investing to reduce smoking in pregnancy cannot be ignored.

However, the benefits of reducing smoking in pregnancy should not only be viewed in terms of the financial savings associated with the direct consequences in terms of maternity and child care costs, but also because of the longer-term benefits accrued through improving the health and wellbeing of families by reducing the incidence of cancer and other chronic illnesses caused by smoking. Maternal smoking after birth is also a significant problem. It is associated with a threefold increase in the risk of sudden infant death[12] and evidence also indicates that if a mother smokes an infant is over twice as likely to become an adult smoker.[13] Pregnancy is recognised as an opportunity to break the cycle of family smoking and particularly because many women are motivated to make life changes, including quitting smoking, when they become pregnant.

KEY POINTS: The costs of smoking in pregnancy

- **Smoking in pregnancy drives up the cost of maternity care and the cost of caring for neonates. Estimates indicate that the cost of neonatal intensive care as a consequence of smoking in pregnancy ranges between £1m and £1.6m each year across Coventry and Warwickshire.**
- **The costs of supporting children born to smokers are also increased – for health, education and wider public services.**
- **The wider societal costs from birth to age 18 are estimated to be £3.4m for an annual cohort of preterm births attributable to smoking across Coventry and Warwickshire.**

1.5 Barriers to Quitting

There are many reasons why women continue to smoke in pregnancy and these need to be addressed if mortality, morbidity and costs are to be reduced. Nicotine is highly addictive and smoking behaviours are deeply entrenched which compounds other barriers to quitting. A recent review of the barriers and facilitators of smoking cessation in pregnancy identified that women who continue to smoke in pregnancy are more likely to have started smoking as teenagers, to live in communities with a high smoking prevalence and frequently suffer financial hardship.[14]

Factors found to be relevant to smoking cessation included: perception of the risk of smoking to the health of the baby (women who quit were more likely to recognise the detrimental impact of smoking on fetal health, whilst the converse was true of women who did not quit); the influence of relationships and whether partners or other household members smoked (household smoking makes cessation more difficult and relapse more

likely), self-efficacy (women who believed they could quit they were more likely to do so) and whether smoking was perceived by the mother as a means of coping with stress.

Professionals also face barriers in tackling smoking in pregnancy, including the following:[15]

- An unfounded belief that delivering stop smoking interventions and referral into services will not have an impact on individual behaviour
- Lack of access to CO monitors and lack of confidence in using them correctly
- Shortage of time to discuss smoking issues in detail
- Absence of a consistent script or key messages to deliver to clients
- Concerns over the potential to damage relationships with the pregnant woman

A recent review exploring barriers and facilitators to smoking cessation from a health care professional's perspective also identified that staff feel that they lack the skills, confidence and motivation to address smoking in pregnancy and that current training was inadequate in helping them to effectively overcome the barriers.[16]

1.6 Relapse Prevention

Preventing a relapse back to smoking among women who have quit during pregnancy is an important objective. However, a recent review concludes that between 47% and 63% of women who quit during pregnancy relapse within 6 months of the birth.[5] It is recognised that further research is required to inform the development of evidence-based relapse prevention interventions.

KEY POINTS: Barriers to reducing smoking in pregnancy

- **There are barriers to women quitting smoking during pregnancy including challenging life circumstances, household smoking and living within communities where smoking is 'the norm'.**
- **Professionals face barriers in encouraging smoking cessation including a lack of training and concerns over their relationship with the pregnant smoker.**
- **Between 47% and 63%of women who do quit smoking in pregnancy relapse in the postnatal period. Relapse is strongly influenced by partners smoking and the local community smoking culture**

1.7 Targets Associated with Reducing Smoking in Pregnancy

National targets have been set to halve the rates of stillbirths, neonatal and maternal deaths and intrapartum brain injuries and to reduce the national rate of preterm births from 8% to 6% by 2025.[17] NHSE's Saving Babies' Lives Care Bundle (SCLCB) has been introduced to support delivery of these ambitions and the first element within the care bundle is focussed on reducing smoking in pregnancy.

A national target to reduce SATOD to 6% or less by 2022 has been set in the national Tobacco Control Strategy and has been endorsed in the NHS Long Term Plan. Data for 2018/19 indicates that there were 962 (10.3%) smokers at time of delivery across Coventry and Warwickshire and achieving the 6% target would mean a total of 570 women smoking at delivery, a reduction of 392 from current levels. Based on current performance and trends over recent years it will be many years before the 6% SATOD target will be met

across Coventry and Warwickshire and as such additional interventions are required to enable achievement.

Tackling the challenges associated with smoking in pregnancy has to be taken forward in the context of a wider systems approach to tobacco control. Whole system approaches to reducing smoking rates among young adults, targeting high risk population groups, and working with partners to reduce the availability of illicit cigarettes, together with the implementation of the full range of relevant NICE guidance will be required alongside specific efforts to help pregnant smokers to quit. If the national tobacco control plan target to reduce the prevalence of smoking among the adult population to 12% by 2025 were achieved there would be far fewer women needing support to quit during pregnancy.

KEY POINTS: National targets

- **The current national target to reduce Smoking at Time of Delivery (SATOD) to 6% by 2022 is unachievable across Coventry and Warwickshire.**
- **Reaching the 6% target would make an important contribution to achieving targets to reduce preterm and stillbirths.**
- **Reducing the population prevalence of smoking and targeting high risk communities is key to ensuring more women start their pregnancy smokefree**

1.8 Current Guidance

NICE Guidance (PH26 'Smoking: Stopping in pregnancy and after childbirth' and PH48 'Smoking: Acute, maternity and mental health services') set out the key steps for supporting women to quit smoking during pregnancy and to prevent relapse. PH26 specifically includes recommendations covering support to help women stop smoking during pregnancy and in the first year after birth. It includes identifying women who need help to quit, referring them to stop smoking services and providing intensive and ongoing support to help them stop.

The SCLCB reinforces delivery of NICE guidance and specifies the following interventions in relation to smoking:

- CO testing should be offered to all pregnant women at the antenatal booking appointment, with the outcome recorded.
- Additional CO testing should be offered to pregnant women as appropriate throughout pregnancy, with the outcome recorded.
- CO testing should be offered to all pregnant women at the 36-week antenatal appointment, with the outcome recorded.
- Referral for those with elevated CO levels (4 parts per million (ppm) or above) for support from a trained stop smoking specialist, based on an opt-out system. Referral pathway must include feedback and follow up processes.
- All relevant maternity staff should receive training on the use of the CO monitor and having a brief and meaningful conversation with women about smoking (Very Brief Advice - VBA).

For women who are smokers at booking the care bundle includes a recommendation for serial growth scans to be undertaken from 32 weeks and recommends a series of process

indicators to monitor progress with implementation of the bundle. These indicators are listed in appendix 3.

In addition, the SBLCB includes recommendations to support continuous learning, including the following:

- Maternity care providers must examine their outcomes in relation to the interventions and trends and themes within their own incidents where smoking was a contributory factor
- Individual Trusts should examine outcomes in relation to similar Trusts to understand variation and inform improvements

It is important that women are provided with prompt access to Specialist Smoking in Pregnancy (SSiP) services so they can receive psychosocial support and nicotine replacement therapy (NRT) to facilitate quitting as soon as is possible. Women are likely to need higher doses of NRT because nicotine in metabolised up to 60% faster by pregnant women.[18] Although quitting smoking at any stage of pregnancy is associated with improved pregnancy outcomes, there is evidence that quitting before the 15th week of pregnancy can reduce the risk of a preterm birth and low birthweight babies to that of a non-smoker.[5]

To support commissioners and providers of specialist smoking cessation services in meeting the specific needs of pregnant smokers the National Centre for Smoking Cessation and Training (NCSCT) has set out the standard treatment programme for pregnant women.[19] The programme reflects the urgency to quit during pregnancy and recognises that pregnant women may require a more flexible approach and longer periods of support than the general population of smokers. The treatment pathway consists of a pre-quit assessment and weekly sessions until four weeks after the Quit Date. A fuller description of the key elements of the programme are included in appendix 4.

In addition to guidance from the above bodies the Smoking in Pregnancy Challenge Group was constituted In March 2012 in response to the then Public Health Minister's challenge to identify ways in which progress could be made to reduce the number of women who smoke during pregnancy. The group is a collaboration of royal colleges, professional organisations, charities and academia with a common goal to address smoking in pregnancy. The group produces periodic reports, guidance and resources to support local areas in addressing smoking in pregnancy. They have also constituted a national network of Smokefree Pregnancy Champions and are encouraging every NHS Trust to support this initiative so that improved information is available to all font-line staff, as well as an opportunity for staff to feed into national policy discussions.

The most recent national review undertaken by the Challenge Group[20] included the following key recommendations:

1. Address variation in local implementation of NICE guidance
2. Take action where smoking in pregnancy rates are high
3. Improve the quality of data monitoring locally and nationally
4. Maximise the use of nicotine as a quitting aid
5. Increase the proportion of the maternity workforce trained to address smoking in pregnancy

The above guidance has collectively informed the development of an LMS wide smoking in pregnancy guideline, but it is recognised that, as elsewhere in the country, there are gaps in delivery and inconsistent approaches that need to be addressed. The recent national

analysis of maternity booking data[2] estimates that only 15% of women smoking at the start of their pregnancy manage to quit before they deliver. In recognition of the widespread challenges in providing support to smokers the NHS Long-term plan makes a clear commitment to provide NHS funded smoking cessation services, as follows:

- By 2023/24, all people admitted to hospital who smoke will be offered NHS-funded tobacco treatment services.
- The model will also be adapted for expectant mothers, and their partners, with a new smoke-free pregnancy pathway including focused sessions and treatments.

NHSE are developing a specification for the recommended model which will be based on international evidence and learning from Greater Manchester's CURE model, including their Smoking in Pregnancy Programme. There will be a focus on providing bespoke specialist advice, nicotine replacement therapy (NRT) and a more intensive face-to-face follow-up regime offered to pregnant women to drive a smoke-free pregnancy. Furthermore, NHSE intends to explore the potential for incentivisation of quit attempts and how best to support partners, given the significant influence of partner smoking on smoking cessation in pregnancy[9].

The interventions to be included in the national specification will build on principles set out in the SBLCB. It will seek to encourage different staff groups, such as maternity support workers, to be involved in the delivery of interventions and will increase access to NRT in health care settings. The intention is that two early implementer sites will stress-test the maternity smoking cessation model in 2020/21 and gather learning prior to wider rollout from 2021/22.

KEY POINTS: National guidance and developments

- **NICE and 'Saving Babies Lives' guidance reinforces the importance of CO testing all pregnant women at booking and referring all smokers on an 'opt-out' basis into specialist smoking cessation services.**
- **It is recognised that all staff should be trained in delivering Very Brief Advice.**
- **Prompt access to specialist support and NRT is essential - smoking related risks are significantly reduced if smoking cessation is achieved by 15 weeks' gestation.**
- **An NHSE maternity smoking cessation service model is being developed for national roll-out from 2021/22, with associated investment**

1.9 Evidence Based Interventions for Reducing Smoking in Pregnancy

Given the significant health and cost consequences of smoking in pregnancy extensive research has been undertaken to assess which interventions are effective in helping women to quit and to quantify both their costs and benefits.

A summary of recent evidence in relation to reducing smoking in pregnancy, including evidence on barriers and facilitators to implementation of effective interventions, is enclosed as appendix 5. This includes evidence showing that:

- In the BabyClear multi-level complex intervention, healthcare workers very much valued being trained on how to approach patients about smoking during pregnancy, without damaging their relationship with them. The intervention was considered

successful in achieving behaviour change in patients because it standardised provision of support, and it facilitated reorganisation of the healthcare system. Another key component in this success was staff belief in the intervention, and commitment across all staff groups. Appendices associated with the report demonstrate the critical importance of senior management support of change, the need for close partnership working, the importance of a dedicated clinical lead in maximising the benefits and minimising the challenges associated with change, and the need for high quality training.[21]

- The BabyClear intervention doubled successful referrals to stop smoking services and significantly increased quit rate by time of delivery. This intervention was found to be cost effective at the health system level. Economic modelling demonstrated that cessation rates can be doubled at an additional cost of £31 per delivery. It included skills training in smoking cessation support for hospital Trust and stop smoking services workers. It also included measures to ensure the provision of CO monitors and supporting materials (e.g. disposable mouth pieces) and the creation of an explicit referral pathway for pregnant smokers[22]

- In another complex intervention programme in Wales, providing additional maternity support workers, trained to deliver a flexible bespoke intervention for pregnant smokers, led to a higher proportion of them engaging with Stop Smoking Services[23]

- Equity-orientated stop-smoking support provided in the primary care context can compensate for lower quit rates among disadvantaged smokers. This can be achieved through tailored interventions, targeted services, and equity-based performance targets for GP practices[24]

- There is strong evidence that financial incentives combined with behavioural support can be significantly more effective in improving cessation programme engagement and increasing quit rates when compared to usual care[25]. This is true both for smokers in general and pregnant smokers, and may be particularly effective for those in low socioeconomic status groups, who typically engage less with stop smoking service[26i]. This intervention was found to be cost effective at the health system level[27].

- Interventions developed largely through the fields of behavioural and social science have been found to decrease rates of smoking in pregnancy. A meta-analysis found that digital interventions, particularly those delivered by text messages or computer programs, can be effective in reducing rates of smoking in pregnancy[28]. Similarly, self-help interventions, including computer-based, written, video, and audio-based materials, can be effective[29]. Behavioural interventions, such as motivational interviewing, counselling and cognitive behavioural therapy (CBT), have also been found to reduce smoking in pregnancy[30]. Interventions which focus on goal setting, coping skills, problem solving, action planning and motivation, appear to be the most effective for addressing smoking in pregnancy[28, 30].

- Barriers - such as- a lack of understanding of what a stop smoking service actually offers, and a lack of confidence in how well the service would work for them - can stop smokers from engaging with stop smoking services. Recommendation of the service by a health care professional was identified as being a facilitator to engagement with stop smoking services[31].

- Providing self-referral forms to women, who have initially “opted-out” of referrals, each time they return for clinical appointments may double subsequent engagement with smoking cessation services[32]. This intervention was also found to be acceptable by healthcare professionals and Trust managers alike[33].

- While little is known about the long-term effects of e-cigarettes on both pregnant smokers and smokers in general, current evidence suggests that harm is significantly reduced when compared to smoking. Though evidence is mixed, one recent RCT suggests that e-cigarettes are more effective for smoking cessation when compared to NRT among smokers in general[34]. A randomised controlled trial (RCT) comparing the efficacy of e-cigarettes and NRT among pregnant smokers is currently ongoing and is briefly outlined in the horizon scan section of the review in Appendix 5[35].

- The economic appraisal underpinning the 2010 NICE guideline concluded that interventions to reduce smoking in pregnancy are not only cost effective but also cost-saving[36]. More recent economic modelling of an intervention to reduce smoking in pregnancy estimated that for every £1 spent, median health care savings of £14 could be accrued[37].

Whilst interventions do reduce rates of smoking in pregnancy, there is evidence that women from more deprived communities tend to benefit to a lesser extent[22,38,39]. It is therefore important to reduce population level smoking rates through targeted interventions so that more women enter pregnancy smokefree.

In light of the evidence in favour of interventions and of the potential cost savings associated with reducing smoking in pregnancy the NHSE Prevention Programme will consider wider action to support a smokefree pregnancy and is seeking to implement evidence-based approaches that could be scaled up. In particular NHSE have stated[9] a particular focus on exploring the following:

- Incentivisation: evidence from Scotland and the Smoking in Pregnancy Challenge Group shows that incentives could play a role in supporting women to quit smoking tobacco. An RCT currently underway in Greater Manchester will hopefully provide more evidence about how this can work.
- Partners: initiatives in Canada are helping to-be and new fathers to quit smoking. How can we best support partners and the wider family to create a smokefree home when they are not directly under our care?
- Preconception: how do we convince people to quit smoking before they become pregnant?
- Digital: what role can digital play in supporting pregnant women and their partners?

KEY POINTS: Evidence for interventions to reduce smoking in pregnancy

- **There is evidence that interventions to reduce smoking in pregnancy are both cost saving and cost effective.**
- **A 'whole system' approach to improving smoking cessation rates has demonstrated a two-fold increase in quitters. Success is more likely where there is:**
    - **A maternity services clinical lead dedicated to reducing smoking**
    - **High quality staff training to deliver VBA**
    - **Close partnership working and effective pathways to smoking cessation support**
- **There is strong evidence for financial incentives combined with behavioural support being effective particularly for those in low socioeconomic groups, who typically engage less with stop smoking services**

2 Purpose and Structure of the Review

2.1 Purpose of the Review

In summary, this review was commissioned in light of the:

- Significant morbidity, mortality and system-wide, potentially avoidable costs associated with smoking in pregnancy
- Increased focus on achieving a reduction in smoking in pregnancy, in particular the 6% SATOD target
- Recognition of the need to accelerate the reduction in SATOD across Coventry and Warwickshire and particularly for the WNCCG population
- The imminent introduction of NHS funded services to enhance support provided to pregnant smokers

The review is required to provide local evidence to enable achievement of the following objectives:

- A reduction in the number of women of child bearing age who smoke.
- An increase in the number of women who stop smoking prior to pregnancy or in very early pregnancy.
- An increase in the number of women accessing stop smoking advice and support.
- An increase in the number of women who set a quit date and the percentage who go on to have a smokefree pregnancy.
- A decrease in the number of women who relapse back to smoking in the postnatal period.
- A decrease in the number of partners or other household members who continue to smoke during a woman's pregnancy.

2.2 Review Structure

The detailed approach to the review was agreed through the Smoking in Pregnancy Task and Finish (SiPT&F) group on behalf of the LMS Board and delivery of the review was managed through regular monthly meetings of the group. Membership of the group is included in appendix 6.

The review has included a wide range of organisations and services including Public Health and CCG commissioners/LMS representatives; maternity services, the SSiP services, Health Visitor and Family Nurse Partnership services, GPs and Practice Nurses and Children and Family Centre/Family hub providers.

The review has included:

- Analysis of relevant routinely available national data
- Analysis of electronic data from maternity and SSiP services
- Case note reviews by maternity, Health Visitor and FNP services to assess adherence to NICE, SBLCB and other relevant guidance
- Staff engagement through surveys and discussion groups
- Corporate assessment outlining compliance of key organisations in terms of meeting NICE recommendations as defined in the CleaR smoking in pregnancy assessment framework and the Saving Babies Lives Care Bundle
- A limited review of the evidence in relation to engaging pregnant smokers with specialist services and interventions supporting them to quit
- The addition of aggregate data from Trusts demonstrating the impact of smoking in pregnancy on key outcomes – preterm births and low birth weight babies

Through the review engagement processes a UHCW consultant obstetrician shared a summary of a small survey she had undertaken in relation to e-cigarettes in pregnancy. This is enclosed as appendix 7 and the findings are summarised alongside the staff engagement findings included in this review.

Based on the findings of the review, as described below, the SiPT&F group have developed a series of recommendations to be considered by the Local Maternity System Board, including CCG and Public Health commissioners and by the wider Health and Care Partnership.

KEY POINTS: Review structure

The review has included:

- **Analysis of electronic data from maternity and SSiP services**
- **Case note reviews by maternity, Health Visitor and FNP services to assess adherence to NICE, SBLCB and other relevant guidance**
- **Staff engagement through surveys and discussion groups**
- **Corporate assessment outlining compliance of key organisations in terms of meeting NICE recommendations as defined in the CleaR smoking in pregnancy assessment framework and the SBLCB**
- **A limited review of the evidence in relation to engaging pregnant smokers with specialist services and interventions supporting them to quit**
- **The addition of aggregate data from Trusts demonstrating the impact of smoking in pregnancy on key outcomes – stillbirths, preterm births and low birth weight babies**

3 Current Services/Pathways

3.1 Maternity Services

The LMS has three maternity providers George Eliot Hospital (GEH), South Warwickshire Foundation Trust (SWFT) and University Hospitals Coventry and Warwickshire (UHCW) which collectively deliver approximately 10,500 births per annum. There are differences in the midwifery workforce at the respective Trusts and differences in the level of investment that do not necessarily reflect population need, as shown in appendix 8. SWFT benefits through having a larger budget per birth and from having a dedicated Public Health midwife plus some additional dedicated smoking in pregnancy midwife time. It is reasonable to assume that these differences will give an improved ability of the maternity service to address smoking as well other issues related to promoting a healthy pregnancy.

Community midwives who see pregnant women for their 'booking appointment' are expected to refer all smokers on an 'opt-out' basis at this time. Over recent years there has been considerable progress in implementing NICE and SBL guidance, including work to ensure all women receive CO monitoring at booking and are referred to the SSiP services on an opt-out basis.

Each Trust includes smoking in pregnancy within their mandatory training programmes and this consists of a 45 minute to one-hour update for staff once every two years. A small number of midwives in each Trust have received additional training in order to be able to provide a 'Risk Perception Intervention', although delivery of the intervention has only been sustained within SWFT and here delivery is to an extent dependent on their being no other workload pressures.

Maternity services work in close partnership with other services. There are two specialist stop smoking in pregnancy (SSiP) providers; a Coventry and a Warwickshire service, two Family Nurse Partnership (FNP) services and two Health Visitor services. All of these services are commissioned by the local Public Health departments and are provided by SWFT.

3.2 Specialist Stop Smoking in Pregnancy (SSiP) Services

The Coventry SSiP service is an integral part of the Family Health and Lifestyles service and for Warwickshire the service sits within the contracted 0-5 Public Health Nursing service. Both services are relatively small (2.8 WTE in Coventry and 4.5 WTE in Warwickshire) and they are commissioned in line with NCSCT guidance. Appendix 9 provides a checklist of provision by each service in terms of meeting NCSCT recommendations. In summary, both services:

- Compare favourably against national performance of SSiP services in terms of % of quitters and % of quitters that are CO verified (as detailed through routine reports published by NHS digital)
- Operate from more than one base
- Provide flexible appointment venues
- Operate Monday to Friday (Coventry 9 to 5, Warwickshire 8am to 8pm)
- Now use 'quit manager' as their referral management system
- Receive electronic referrals (although this was only established for the Coventry service in January 2020) and whilst GEH make electronic referrals to the Warwickshire service these are not direct from the midwife (ie the midwife passes referrals to administrative staff, so building the potential for delay)

- Do not have activity targets, but have target response times of contact within 2 days of receipt of the referral (NICE recommendation is one day) and the offer of an appointment within 2 weeks (NICE recommendation is within one week)
- Spend significant time in attempting to contact smokers who have been referred
- Provide access to combination NRT through a 'letter of recommendation' (ie similar to a prescription that must be redeemed at a pharmacy) and provide support through using a combination of recommended behaviour change techniques.
- Are e-cigarette 'friendly'
- Incorporate relapse prevention strategies into the support provided and offer a postnatal visit but cannot issue NRT unless the woman actually relapses and becomes a smoker in the postnatal period.
- Deliver regular updates to midwives through providing updates on their mandatory training programmes

The Warwickshire service has a specific website to aid communication/provision of information whilst for the Coventry service information can be accessed via the Family Healthy Lifestyles website. Both services are able to provide support to partners/other household smokers, but only if this can be delivered at the same time as the support provided to the pregnant woman. As such this is very limited provision and in the main family smokers are sign-posted to mainstream services.

3.3 Family Nurse Partnership (FNP) Services

The Coventry and the Warwickshire FNP services provide dedicated support to vulnerable expectant/new parent teenagers, mostly single women and the aim is enrol clients before the 16th week of pregnancy. A high proportion of FNP clients smoke, often misuse other substances and frequently have chaotic lives. Commissioners expect FNP services to refer smokers to SSiP services and to support them in their quit attempts. National data from the FNP programme indicates that Warwickshire North and Coventry clients tend to report higher smoking rates during pregnancy and at the end of pregnancy than the average for all FNP sites nationally, whilst the South Warwickshire service reports comparably lower values for these measures.

The national programme is in the process of rolling out an enhanced approach to smoking in pregnancy as part of the 'Personalisation Programme'. This will include adopting a family/whole household approach to smoking cessation, the introduction of new resources, the use of CO monitoring, enhanced staff training in advanced communication skills and mindfulness techniques, and revised pathways.

3.4 Health Visitor (HV) Services

The Coventry and the Warwickshire Health Visitor (HV) services are commissioned to provide an antenatal visit (around 28 weeks) but can only do so when they are notified of the pregnancy by midwifery services. Whilst the Coventry HV service was under capacity during the transition of the service to SWFT antenatal visits were provided on a targeted basis only. However, increasing the number of ante-natal contacts delivered is a priority for the Family Health and Lifestyles service and work to develop the increase offer is underway.

When provided the antenatal visit provides an opportunity to encourage quitting among smokers (making referrals to SSiP services) and to advise quitters on relapse prevention, although in practice this may not happen. HVs also provide a 'new birth' visit (14- 28 days post-natal), 6 to 8-week postnatal review, 9-12 months and 2-2.5 years contacts that also

provide opportunities to encourage quitting among smokers (and their families) and this is often addressed through conversations focussed on promoting ‘smokefree’ homes.

3.5 Primary Care Services

Whilst NICE guidance does specify that GPs, Practice Nurses and other health care professionals have a role to play in supporting a reduction in smoking in pregnancy, in practice they make a relatively small contribution on the basis that women receive the bulk of their maternity care from midwives and opportunities to intervene are perceived to be few. There is however evidence that in Warwickshire a small number of women (approximately 37 per annum) are receiving SSiP support through their GP or pharmacy but among these women there is a lower quit rate (21% vs 46%) and as such all pregnant smokers should be directed towards the specialist provider.

KEY POINTS: Current services and pathways

Services include:

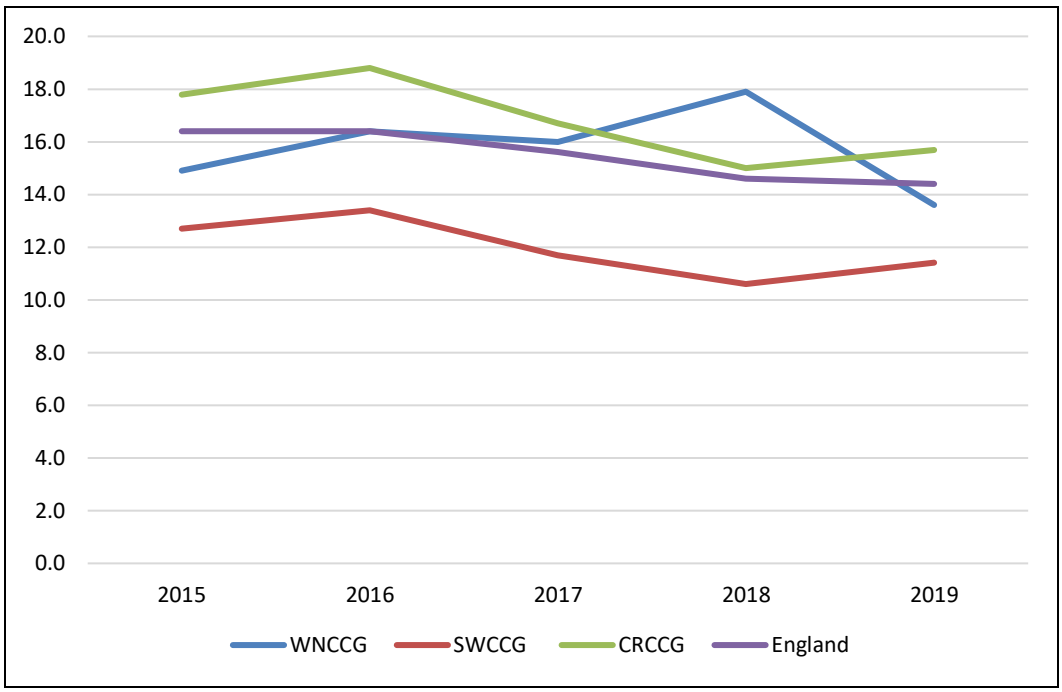
- **Three maternity services providers; GEH, SWFT and UHCW**
- **Two FNP, two Health Visitor and two Specialist Smoking in Pregnancy (SSiP) services that are commissioned by the Public Health departments**
- **Primary care services play a limited role in maternity care, essentially only having opportunistic opportunities to advise on smoking in pregnancy**
- **In Warwickshire approximately 37 per annum are receiving smoking cessation support through their GP or pharmacy but among these women there is a lower quit rate**

4 Findings: Analysis of Routinely Available Data

4.1 Population Smoking

Clearly rates of smoking in pregnancy are related to general population smoking levels with low population smoking levels tending to be associated with low SATOD rates and vice versa. Smoking rates among the Coventry and Warwickshire adult population (16+) are shown by CCG in Figure 4.1.

Figure 4.1. Population Smoking Trends 2015 to 2019



Five-year population smoking trend for 16+ smokers at CCG level. GPPS data, National General Practice Profiles. England shown for comparison

Figure 4.1 indicates that smoking prevalence is lower in SWCCG (11.4%) than for CRCCG (15.7%) or WNCCG (13.6%). These estimates are based on responses to the GP practice survey which includes a larger population sample than the Adult Population Survey (APS), but the APS estimates are included for reference in appendix 10, as are population estimates for districts and boroughs. An explanation of the differing methodologies for the estimates is provide in appendix 10.

Table 4.1 shows the most recent general population smoking rates (using data from the APS) at the Local Authority and CCG levels compared to areas with statistically similar demographics (the closest statistical neighbour is as defined by CIPFA and NHSE (see appendix 10 for details of statistical neighbours)).

Table 4.1. Smoking Rates for Local Authority and CCG Populations Compared to Closest Statistical Neighbour

Area	Population	% Smokers (CI)	% Closest Statistical Neighbour (CI)
Coventry LA	366,785 (2018)	15.9% (13.4-18.4)	19.2% (16.7-21.8) (Derby)
Warwickshire LA	571,010 (2018)	14.1% (11.7-16.5)	12.1% (9.9-14.3) (Gloucestershire)
CRCCG	524,357 (2019)	17.4% (14.9-19.9)	12.5% (10.1-14.9) (Sheffield CCG)
SWCCG	292,195 (2019)	9.6% (6.9-12.4)	11.2% (8.4-14.1) (East Leicestershire and Rutland CCG)
WNCCG	193,148 (2019)	15.9% (11.3-20.5)	14.0% (9.9-18.1) (Redditch and Bromsgrove CCG)
England	55,977,178 (2019)	14.4% (14.2-14.7)	

Population smoking prevalence based on the APS survey

Table 4.1 shows that in 2018, Warwickshire Local Authority has a greater proportion of smokers (14.1%) than their closest statistical neighbour (12.1%), whilst Coventry's prevalence (15.9%) is lower than their comparator (19.2%). Of the local CCGs, Coventry and Rugby demonstrates the highest proportion of smokers (17.4%) and South Warwickshire the lowest (9.6%).

While population estimates give a summary prevalence figure for the total adult population national reports indicate that the likelihood of being a current smoker is highest in younger age groups with adults aged 25 to 34 being the most likely to smoke (19%) and those aged 65 and over being the least likely (8%). Likewise, there are differences by socio-economic groups with adults classified as routine and manual workers being most likely to smoke (25%), as compared to those in managerial and professional occupations (10%) and 29% of unemployed adults were smokers compared to 15% of employed adults.[40]

4.2 Smoking at Time of Delivery

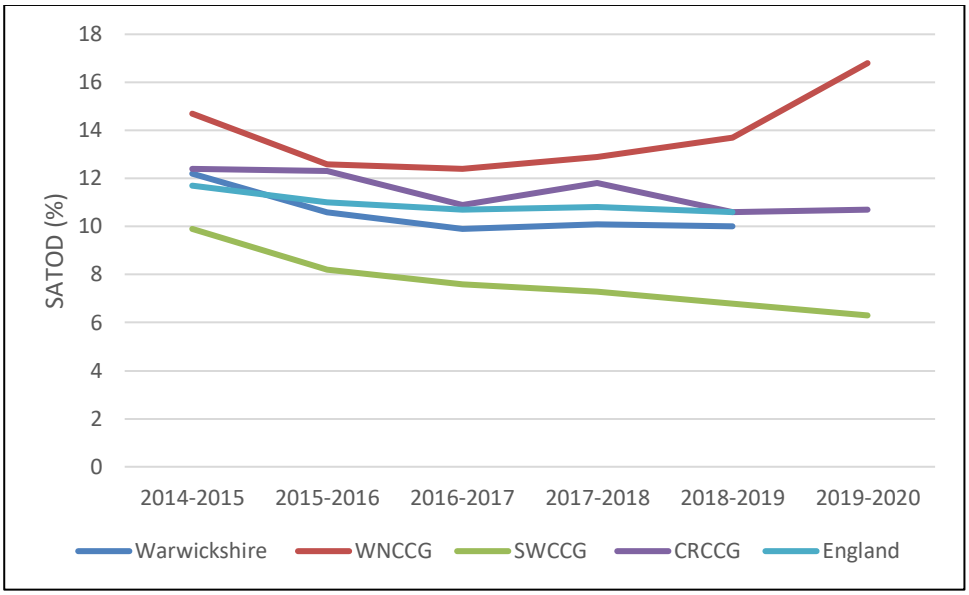
SATOD is a mandatory data item in the national maternity minimum data set. For the England population there has been a gradual decline in SATOD, although reductions have slowed over recent years and the current trend will not realise achievement of the 2022 6% target.

SATOD data is available through NHS Digital[41]. For the SWCCG population there has been a reduction from 9.9% in 2014/15 to 6.3% in 2019/20 (based on data April to December 2019) and as such achievement of the 6% target is likely.

Whilst there has been a decrease in SATOD for CRCCG the pattern has not been consistent. There was a decline from 12.4% to 10.9% in 2016/17. This was followed by another small increase and then a decline to 10.6% in 2018/19, whilst the projection for 2019/20 is a further increase with data to December 2019, showing SATOD at 10.7%.

The WNCCG population has the most worrying SATOD trend decreasing from 14.7% in 2014/15 to 11.5% in 2016/17. Since then there has been a year on year increase with the 2019/20 value being 16.8% (to December 2019).

Figure 4.2 Smoking at Time of Delivery 2014/15 to 2019/20



NB: Coventry line not visible as the CRCCG line overlies it (values are the same)

Table 4.2 shows the SATOD prevalence for Coventry and Warwickshire populations against their 'closest statistical neighbour' (see appendix 10 for statistical neighbour details). It shows that for 2018/19, Warwickshire North CCG has a higher rate of smoking at time of delivery relative to the comparator and also demonstrates the highest rate of smoking at time of delivery in the local area as well as being higher than the England average. The number smoking at time of delivery is also shown for each geography.

Table 4.2. Smoking at Time of Delivery 2018/19 by Local Authority and CCG Populations with Comparator

Area	SATOD Number 2018/19	SATOD % 2018/19 (CI)	% Comparator (CI)
Coventry LA	433	10.6% (9.7-11.6)	15.7% (14.4-17) (Derby)
Warwickshire LA	529	10.0% (9.2-10.8)	11.1% (10.3-11.9) (Gloucestershire)
CRCCG	556	10.6% (CI 9.8-11.4)	11.7% (10.9-12.5) (Sheffield CCG)
SWCCG	157	6.8% (5.8-7.9)	6.7 (5.8-7.8) East Leicestershire and Rutland CCG)
WNCCG	249	13.7% (CI 12.2-15.4)	12.0 (10.5-13.6) (Redditch and Bromsgrove CCG)
England		10.6% (10.5-10.7)	

4.3 Access to Smoking Cessation Support

National data on the take-up of smoking cessation support is published on a quarterly and annual basis. Table 4.3 includes data for the period 2015/16 to 2018/19 for Coventry and Warwickshire. The national dataset does not include the number of referrals made to services but includes details of pregnant women supported either through general population smoking cessation services as well as women (the majority) supported through the specialist smoking in pregnancy providers.

Over the period the number of women who set a quit date each year ranged from 297 to 347 for Coventry and from 235 to 384 for Warwickshire. There is no clear trend in the numbers setting a quit date in Coventry each year, whilst for Warwickshire there has been a year on year decrease since 2016/17.

Table 4.3. Coventry and Warwickshire Uptake of Specialist Smoking in Pregnancy Services 2015/16 to 2018/19

	2015/2016			2016/2017			2017/2018			2018/2019		
Area	**Set Quit Date**	**Self Reported Quit n (%)**	**% Quits CO Validated**	**Set Quit Date**	**Self Reported Quit n (%)**	**% Quits CO Validated**	**Set Quit Date**	**Self Reported Quit n (%)**	**% Quits CO Validated**	**Set Quit Date**	**Self Reported Quit n (%)**	**% Quits CO Validated**
Coventry	297	145 (49)	121 (83)	347	153 (44)	141 (92)	309	157 (51)	137 (87)	322	135 (42)	110 (81)
Warwickshire	328	147 (45)	124 (84)	384	181 (47)	150 (83)	279	125 (45)	105 (84)	235	130 (55)	87 (67)
C&W Total	625	292	245	731	334	291	588	282	242	557	265	197
England	17443	7914 (45)	4837 (61)	15219	6964 (46)	4303 (62)	13712	6103 (45)	3668 (60)	13772	6344 (46)	3883 (61)

Table 4.3 shows that for Coventry and Warwickshire between 44% and 55% of women who set a quit date self-report quitting (4-week quitters), which compares to 45% to 46% nationally. This has remained consistent throughout the four-year period. The percentage of self-reported quits that are CO validated ranges from 81% to 92% for Coventry and between 67% and 84%. Local validation of quitters is higher across Coventry and Warwickshire than the national average (60% to 62%).

The figures show that each year there are between 265 and 334 4-week quitters among pregnant women across Coventry and Warwickshire. This needs to be viewed in the context of their being approximately 1,000 women still smoking at the time of delivery.

4.4 Birth-Related Statistics

Smoking in pregnancy is known to be causally related to low birthweight and preterm births, among other adverse outcomes. Table 4.4 shows birth related statistics for the local authority and CCG populations. It can be seen that in comparing local authority populations Coventry has a higher proportion of low birthweight births than Warwickshire, although the proportion of preterm births is similar for the two populations. Coventry also has a higher teenage conception rate, which is also associated with increased preterm and low birthweight rates.

For the CCG populations CRCCG has the highest rates of adverse birth outcomes and SWCCG the lowest.

Table 4.4. Low birth weight, preterm births and teenage conceptions for Coventry and Warwickshire populations

Area	Number of live births 2017	% LBW of all births 2017	% preterm births 2017	% preterm with LBW 2017	Teenage Conception rate 2017 – under 18	Population IMD score 2019
Coventry LA	4511	9.6	10.0	55.99	26.1	25.6
Warwickshire LA	6065	7.5	9.9	51.17	17.5	15.6
CRCCG	5715	9.3	11.7	53.89	25.0	22.9
SWCCG	2644	6.6	9.5	49.40	12.7	11.9
WNCCG	2217	8.1	10.0	56.76	20.9	21.7
England		7.4			17.8	

KEY POINTS: Analysis of routinely available data

- **Data from GP practice survey indicates that general population smoking prevalence is lower in SWCCG (11.4%) than for CRCCG (15.7%) or WNCCG (13.6%)**
- **The likelihood of being a current smoker is highest in younger age groups with adults aged 25 to 34 being the most likely to smoke (19%)**
- **Smoking at Time of Delivery for 2018/19 gives the following values: CRCCG 10.6%, SWCCG 6.8% and WNCCG 13.7%**
- **SATOD has been increasing for WNCCG over recent years with a value for 2019/20 (data to December 2019) of 16.8%**
- **National SSiP data reports for the period 2015/16 to 2018/19 indicate that the number of women setting a quit date each year ranged from 297 to 347 for Coventry and from 235 to 384 for Warwickshire residents.**
- **There are between 265 and 334 4-week quitters among pregnant women across Coventry and Warwickshire each year**

5 Findings: Analysis of Trust Electronic Data

5.1 Completeness of Maternity Data

In order to enable a detailed assessment of the epidemiology of smoking in pregnancy maternity data at booking, 36 weeks and at time of delivery data was requested for the 3-year period 2016/17 through to 2018/19. UHCW provided 21,228 records but for the period September 2016 through to September 2020. In order to enable matching with other data sources the records from April to September 2020 were not included in the analysis.

Table 5.1. Total Records (2016/17 to 2018/19) by Trust

Trust	Coventry (% of Trust Total)	Warwickshire (% of Trust Total)	Other (% of Trust Total)	Number of Records (%)
GEH	323 (4%)	6497 (77%)	1621 (19%)	8,441 (25%)
SWFT	266 (3%)	7057 (82%)	1329 (15%)	8,652 (25%)
UHCW *	11594 (68%)	4263 (25%)	1268 (7%)	17,125 (50%)
Total	**12,183**	**17,817**	**4,218**	**34,218**

* UHCW data for 2.5 years

Table 5.1 details the total records included in the provisional analyses by Trust. The 34,218 records included the records of women with a district of residence outside Coventry and Warwickshire. It can be seen that overall 4218 records (12%) were for women outside Coventry and Warwickshire. UHCW can be seen to account for 50% of the records but would have made up approximately 55% of the total if 3 years full data had been included.

Table 5.2 shows the total records provided by each Trust by local authority population. It can be seen that overall 68% of UHCW's records were for Coventry patients, 25% were for Warwickshire and 7% were for patients from other authorities. For SWFT 3% of records were for Coventry patients, 82% were for Warwickshire and 15% were for patients from other authorities. Overall 4% of GEH's records were for Coventry patients, 77% were for Warwickshire and 19% were for patients from other authorities.

Table 5.2. Total Records (2016/17 to 2018/19) by Trust and by Local Authority

	UHCW				SWFT				GEH			
Year	**Coventry**	**Warwick shire**	**Other**	**Total**	**Coventry**	**Warwick shire**	**Other**	**Total**	**Coventry**	**Warwick shire**	**Other**	**Total**
2016/17*	2046 (68%)	743 (25%)	220 (7%)	3009*	73 (2%)	2390 (83%)	429 (15%)	2892	84 (3%)	2147 (77%)	572 (20%)	2803
2017/18	4808 (67%)	1844 (26%)	524 (7%)	7186	70 (3%)	2314 (85%)	347 (13%)	2731	116 (4%)	2195 (77%)	554 (19%)	2865
2018/19	4740 (68%)	1676 (24%)	524 (8%)	6940	123 (4%)	2353 (78%)	553 (18%)	3029	123 (4%)	2155 (78%)	495 (18%)	2773
Three-year total	**11594 (68%)**	**4263 (25%)**	**1268 (7%)**	**17125**	**266 (3%)**	**7057 (82%)**	**1329 (15%)**	**8652**	**323 (4%)**	**6497 (77%)**	**1621 (19%)**	**8441**

UHCW 2016/17 * data for 6 months

Prior to the removal of ‘other’ patients from the dataset some basic ‘data quality’ checks were undertaken, looking at the completeness of data. The full details are included in appendix 11, but Table 5.3 summarises some of the key findings and for comparative purposes includes statistics on missing data items from a PHE analysis of national booking data.

Table 5.3 Missing/Unknown Data Items for Key Indicators

Trust	Smoking status	BMI	Alcohol	Ethnicity
UHCW	1554 (9%)	1711 (10%)	27 (0%)*	483 (3%)
SWFT	344 (4%)	1087 (13%)	8394 (97%)*	1472 (17%)
GEH	386 (14%)	1781 (21%)	1654 (20%)	1845 (22%)
National %	12.2%	18.7%	43.1%	14%

*It is likely that this data shortfall is a reflection of the way data was downloaded for submission

It can be seen that data completeness varies by indicator and by Trust and comparison with national data completeness statistics can be made. Fuller analysis including a wider range of indicators is detailed in appendix 11. In interpreting missing smoking at booking data it is important to note the observation PHE make in their report[2] ie: *It is possible that some of these women may be smokers, meaning that the proportion of women who smoke may be underestimated*).

It should be noted that it is possible that the way in which data items were downloaded by Trusts for inclusion in the dataset may have impacted on the completeness of the records and as such this analysis may not reflect the true quality of the maternity data held by each Trust. There is some evidence for this as indicated in the completeness of data submitted in relation to 36-week smoking status and SATOD detailed in Table 5.4 (NB. SWFT were unable to provide 36-week smoking status for all records).

Both 36-week smoking status and SATOD are routinely collected data items and data completeness is assessed through LMS wide and national data checking processes. These routine processes indicate much better data quality than is evident from this data set; for example, whilst the proportion of missing SATOD data in table 5.4 is high, national data analysis reported the following proportion of missing values for 2018/19 CRCCG 1.8% SWCCG 1.8% and WNCCG 0.3%. Some of this difference will be accounted for by women who booked at Trusts but did not go on to deliver there.

Table 5.4. Missing Smoking Related Statistics

Trust and year	Total records	36-week Smoking status (%)	SATOD (%)
UHCW			
2016/17	3009	2398 (80%)	564 (19%)
2017/18	7186	5984 (83%)	1346 (19%)
2018/19	6940	5520 (80%)	1437 (21%)
SWFT			
2016/17	2892	No data	103 (4%)
2017/18	2731	No data	60 (2%)
2018/19	3029	No data	44 (1%)
GEH			
2016/17	2803	775 (28%)	1658 (59%)
2017/18	2865	714 (25%)	688 (24%)
2018/19	2773	578 (21%)	563 (20%)

6 Findings: Analysis of Coventry and Warwickshire Maternity Booking Data

6.1 Overview of Booking Data by Trust and CCG

Of the 34,228 records received from the Trusts, 30,000 were for maternity care provided to the Coventry and Warwickshire population. Table 6.1 summarises the maternity bookings by Trust and Local Authority for the years 2016/17 through to 2018/19.

Table 6.1. Coventry and Warwickshire Maternity Bookings

	Bookings by Trust					Bookings by CCG			
	2016/17	**2017/18**	**2018/19**	**Total**		**2016/17**	**2017/18**	**2018/19**	**Total**
UHCW*	2789*	6652	6416	**15857**	**CRCCG**	2844	6416	6394	**15857**
SWFT	2463	2384	2476	**7323**	**SWCCG**	2376	2446	2395	**7323**
GEH	2231	2311	2278	**6820**	**WNCCG**	2263	2485	2381	**6820**
	7483	**11347**	**11170**	**30000**		**7483**	**11347**	**11170**	**30000**

	Bookings by Local Authority			
	2016/17	**2017/18**	**2018/19**	**Total**
Coventry	2203	4994	4986	**12183**
Warwickshire	5280	6353	6184	**17817**
	7483	**11347**	**11170**	**30000**

* **UHCW data for 6 months only (October 2016 to March 2017)**

6.2 Smoking at Booking

Table 6.2 provides an overview of the 3 years (2.5 years for UHCW) data combined by the populations of relevance to this review. It includes the total bookings and the proportion of smokers – as a percentage of those with a known smoking status. It can be seen that UHCW and CRCCG have the largest number of smokers by virtue of their larger populations, but GEH and WNCCG have the highest proportion of smokers at booking.

The total smokers at booking within the period were 3695, 13.4% of all bookings with a known smoking status across Coventry and Warwickshire. The average number of smokers per annum is also shown indicating that each year there are approximately 1368 smokers identified at maternity booking.

Table 6.2. Summary Overview of Bookings and Smoking at Booking by Population

	Booking Data			
	Total Number of bookings	**Number with Known Smoking Status**	**Number (%) Smoking at Booking[1]**	**Average Number of Smokers PA[2]**
UHCW	15857	14795	1697 (11%)	814
SWFT	7,323	7074	634 (9%)	200
GEH	6820	5670	885 (16%)	353
CRCCG	15654	14742	2034 (14%)	807
SWCCG	7217	6864	616 (9%)	198
WNCCG	7129	5933	1045 (18%)	362
Coventry	12183	11497	1619 (14%)	645
Warwickshire	17817	16042	2076 (13%)	723
Coventry and Warwickshire	**30000**	**27539**	**3695 (13.4%)**	**1368**

[1] **As % of those with known smoking status** [2]**Based on 2017/18 and 2018/19 data**

Table 6.3 shows the 3695 recorded smokers at booking over the 3-year period alongside the number of bookings for which smoking status was unknown. When compared as a proportion of those with a known smoking status at booking GEH can be seen to have the highest smoking levels at 18% to 19% per annum and SWFT the lowest with 8% to 10% of women smoking. National data[2] reports that 12.7% of women were recorded as smokers at booking.

There were a further 2461 (8.2% of all bookings) where smoking status was unknown. This varies by Trust with GEH having the highest proportion with an unknown smoking status at 14% to 20% per annum (with a reduction in those unknown over the time period) and SWFT have the lowest proportion with an unknown smoking status – 2% per annum over recent years. The proportion with unknown smoking status has increased from 3% of records at UHCW to 8% in 2018/19.

National data[2] indicates that 12% of records nationally did not have smoking status recorded. The national report further noted that a considerable proportion of those with missing status could be smokers. As such the total proportion of women smoking at booking across Coventry and Warwickshire whilst recorded at 13% over the 3-year period could approach 20% of all bookings, depending on the smoking status of those unknown.

In summary whilst the average number of smokers at booking each year across Coventry and Warwickshire is 1368, a further average of 885 had an unknown smoking status each year.

Table 6.3. Overview of Smoking Status at Booking by Trust by Year

		Smoking Status				
	Bookings	**Yes**	**No**	**Unknown (%)**	**Total Known**	**% Smokers[1]**
2016/17						
UHCW*	2789[1]	407	2283	99 (3)	2690	15%
SWFT	2463	234	2084	145 (6)	2318	10%
GEH	2231	319	1466	446(20)	1785	18%
	7483	**960**	**5833**	**690**	**6793**	**14%**
2017/18						
UHCW	6652	843	5391	418 (6)	6234	14%
SWFT	2384	201	2133	50 (2)	2334	9%
GEH	2311	363	1570	378 (16)	1933	19%
	11347	**1407**	**9094**	**846**	**10501**	**13%**
2018/19						
UHCW	6416	785	5086	545 (8)	5871	13%
SWFT	2476	199	2223	54 (2)	2422	8%
GEH	2278	344	1608	326 (14)	1952	18%
	11170	**1328**	**8917**	**925**	**10245**	**13%**
All years	**30000**	**3695**	**23844**	**2461 (8.2)**	**27539**	**13%**

***UHCW data for 6 months only (October 2016 to March 2017) [1]Smokers as % of those with known smoking status**

Tables 12.ia to 12.ic in appendix 12 provide a summary of smoking rates and smoking status as identified at booking by CCG populations for each year. They show that for the CRCCG population the smoking rate at booking has decreased from 15% to 13% over the period, whilst the proportion with unknown smoking status has increased from 3% to 8%.

For the SWCCG population the proportion of smokers has decreased from 10% to 9%, with unknowns decreasing from 6% to 4%.

For the WNCCG population smokers identified at booking have decreased from 18% to 17%. While the proportion with unknown booking status has decreased from 20% it is still high at 15%.

Tables 12.iia and 12.iib in appendix 12 provide the same information for the Local Authority populations and show that smoking at booking has decreased from 15% to 14% for Coventry women and from 14% to 12% for Warwickshire women over the period. Those with unknown smoking status have increased from 3% to 7% for Coventry and has decreased from 12% from to 9% for Warwickshire women.

Tables Table 6.4 shows the number of maternity bookings, together with key characteristics of the Trust maternity populations. The average age of the SWFT population is slightly higher than the other two Trust populations but overall the average age at booking ranges from 30.1 years to 34 years. The table includes % BME for those with a known BME status. UHCW has the highest proportion of BME groups at 44% to 48% of bookings each year, and GEH has the lowest ranging from 16% to 17%. The

proportion of maternity bookings living in the most deprived Index of Multiple Deprivation (IMD) decile ranges from 0% at SWFT to 16% of the UHCW bookings.

Table 6.4. Number of Maternity Bookings by Trust and Basic Characteristics of Bookings

	2016/17			2017/18			2018/19		
	UHCW	**SWFT**	**GEH**	**UHCW**	**SWFT**	**GEH**	**UHCW**	**SWFT**	**GEH**
Number of bookings	2789[1]	2463	2231	6652	2384	2311	6416	2476	2278
Average age (range)	32.2 (16 – 49)	34 (19 - 53)	31.7 (18 – 58)	31.6 (17 – 52)	33 (17 – 50)	31 (16- 51)	30.1 (15 – 58)	32.2 (18 – 49)	30.8 (15- 49)
Number % BME	1196 (44%)	414 (20%)	313 (17%)	3056 (47%)	489 (24%)	294 (16%)	2873 (48%)	488 (24%)	284 (16%)
Number %Deprived[2]	441 (16%)	12 (0%)	186 (8%)	1069 (16%)	8 (0%)	200 (9%)	1046 (16%)	13 (1%)	196 (9%)
Number % Smoker	407 (15%)	234 (10%)	319 (18%)	843 (14%)	201 (9%)	363 (19%)	785 (13%)	199 (8%)	344 (18%)
Total smokers[3]	**960[1] (14%)**			**1407 (13%)**			**1328 (13%)**		

[1] UHCW data for 6 months only (October 2016 to March 2017) [2] Postcode in the most deprived decile [3] As % of those with known smoking status

Table 6.5 provides an overview of booking numbers and key characteristics of women by CCG population. As would be expected the characteristics of women in terms of age, BME status, deprivation and smoking closely reflects the respective Trust values.

Table 6.5. Coventry and Warwickshire Maternity Bookings by CCG

	2016/17			2017/18			2018/19		
	CRCCG	**SWCCG**	**WNCCG**	**CRCCG**	**SWCCG**	**WNCCG**	**CRCCG**	**SWCCG**	**WNCCG**
Number of bookings	2844[1]	2376	2263	6416	2446	2485	6394	2395	2381
Average age (range)	32.2 (16 – 49)	34.0 (19 – 53)	31.7 (19 – 58)	31.5 (17 – 52)	33.1 (17 – 50)	31 (16- 51)	30.8 (15 – 58)	32.3 (18 – 49)	30.1 (15 – 56)
Number % BME	1195 (44%)	3922 (20%)	336 (18%)	2949 (48%)	503 (24%)	387 (19%)	2829 (48%)	471 (23%)	345 (18%)
Number %Deprived[2]	460 (16%)	0	179 (8%)	1078 (17%)	0	199 (8%)	1059 (17%)	0	196 (8%)
Number % Smoker[3]	420 (15%)	220 (10%)	320 (18%)	828 (14%)	200 (9%)	379 (18%)	786 (13%)	196 (9%)	346 (17%)

[1] **UHCW data for 6 months only (October 2016 to March 2017)** [2] **Postcode in the most deprived decile** [3] **As % of those with known smoking status**

Table 6.6 provides an overview of booking numbers and key characteristics of women by Local Authority population. Coventry has an average of 645 smokers at booking and Warwickshire an average of 723. Coventry has higher proportions of bookings from BME populations, the most deprived IMD decile and has proportionately more smokers than Warwickshire.

Table 6.6. Coventry and Warwickshire Maternity Bookings by Local Authority

	2016/17		2017/18		2017/18	
	Coventry	**Warwickshire**	**Coventry**	**Warwickshire**	**Coventry**	**Warwickshire**
Number of bookings	2203[1]	5280	4994	6353	4986	6184
Average age (range)	32.0 17-49	32.8 16-58	31.3 17-52	32.0 16-51	30.6 15-53	31.2 15-58
Number **% BME**	1038 47%	885 17%	2498 50%	1341 21%	2454 49%	1191 19%
Number **%Deprived[2]**	460 21%	179 3%	1078 21%	199 3%	1059 21%	196 3%
Number **% Smoker[3]**	330 15%	630 12%	646 13%	761 12%	643 13%	685 11%

[1] **UHCW data for 6 months only (October 2016 to March 2017)** [2] **Postcode in the most deprived decile.** [3] **Smokers as % of all bookings, not those with known status**

Table 6.7 includes the numbers of bookings and characteristics of the women by District and Borough populations. This shows that the highest proportion of smokers across Coventry and Warwickshire are from Nuneaton and Bedworth. It also shows a higher level of Mental Health related issues pertaining to the South Warwickshire population. This is likely to be a reflection of improved identification and/or recording of mental ill-health within SWFT.

Table 6.7. Coventry and Warwickshire Maternity Bookings by Districts and Boroughs – All Years Combined

Population	Bookings	Smoker	BME	Obese	MH	Gestation	Deprivation Decile=1	Complex Social Care
Coventry	12183	1619 (13%)	5990 (49%)	2877 (24%)	1098 (9%)	10.2	2597 (21%)	1614 (13%)
North Warwickshire	1915	220 (11%)	133 (7%)	401 (21%)	204 (11%)	10.9	51 (3%)	76 (4%)
Nuneaton and Bedworth	5214	825 (16%)	935 (18%)	1297 (25%)	544 (10%)	10.5	523 (10%)	355 (7%)
Rugby	3471	415 (12%)	983 (28%)	748 (22%)	389 (11%)	10.6	0%	117 (3%)
Stratford-on-Avon	2937	265 (9%)	393 (13%)	606 (21%)	923 (31%)	10.3	0%	9 (0%)
Warwick	4280	351 (8%)	973 (23%)	687 (16%)	1141 (27%)	10.5	0%	14 (0%)
Warwickshire	17817	2076 (12%)	3417 (19%)	3739 (21%)	3201 (18%)	10.5	574 (3%)	571 (3%)
C&W Total	**30000**	**3695 (12%)[1]**	**9407 (31%)**	**6616 (22%)**	**4299 (14%)**	**10.4**	**3171 (11%)**	**2185 (7%)**

1 Smokers as a proportion of all bookings as opposed to the number of bookings with known smoking status

Tables 12.iii and 12.iv in appendix 12 provide bookings and smoking at booking rates by JSNA populations. In Coventry the highest smoking at booking rate is recorded for the Wood Side Family Hub at 20% and in Warwickshire Nuneaton Common and West has the highest rate at 22%

Analysis of smoking at booking at Lower Super Output Area (LSOA) level for the Coventry population gives a range of 0% to 37% smokers at booking. Of the 196 Coventry LSOAs 14 have rates of smokers at booking of 25% or more. The range of smoking at booking rates across the 341 Warwickshire LSOAs is 0% to 34% with 23 LSOAs having a rate of 25% or more. These LSOAs are shown by JSNA geography in Tables 12.v and 12.vi in appendix 12.

Table 6.8 shows the maternity bookings for the 3 years combined by IMD deciles for Coventry and for Warwickshire. It also shows the number of smokers at booking by deprivation decile. The table shows that 35% of all Coventry's bookings are in the lowest, most deprived quintile (deciles 1 and 2) as compared to 10% of Warwickshire's bookings.

The table also shows that 48% of all of Coventry's smokers at booking live in the lowest quintile but that by contrast just 21% of Warwickshire's smokers at booking live in the lowest quintile. In Warwickshire smokers tend to be more evenly spread over the deprivation deciles. For example, the vast majority, 85%, of Coventry's smokers are in the lower 5 deciles, whereas in Warwickshire just 58% of smokers are in these deciles.

When looking at the proportion of bookings within a decile or quintile that are smokers, there are again some differences between Coventry and Warwickshire. It can be seen that of all the Coventry bookings in the lowest quintile 35% are smokers, whereas in Warwickshire of all the bookings in the lowest quintile 53% smoke.

In summary in Coventry a woman booking from decile 1 is 5 times more likely to be a smoker than a woman from the least deprived decile and in Warwickshire the difference is a 6 times the proportion.

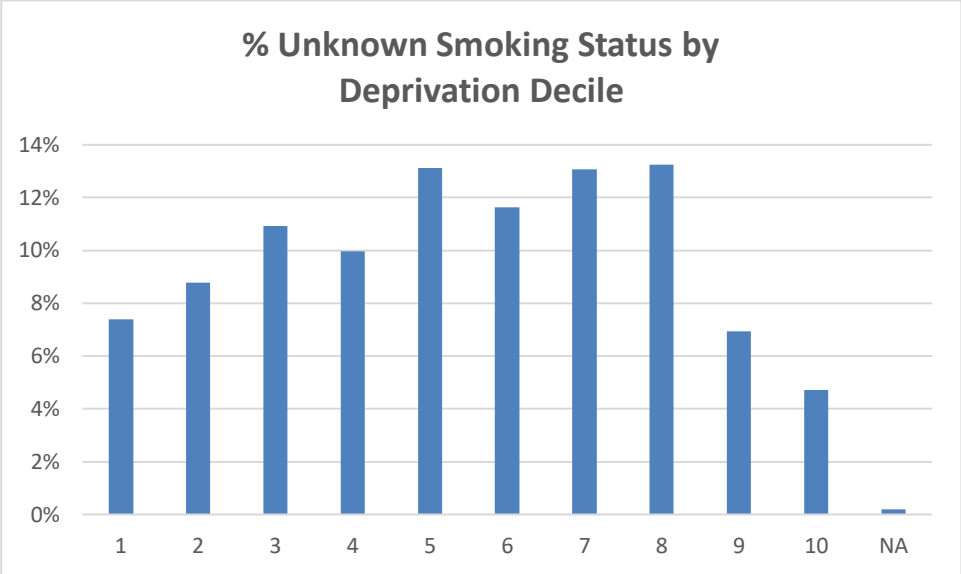
Table 6.8. Coventry and Warwickshire Bookings and Smokers by Deprivation Decile

	Coventry 3 years data combined					Warwickshire 3 years data combined				
Deprivation Decile	**All Bookings**	**% All Bookings by Decile**	**Number Smokers**	**% All Smokers by Decile**	**% Bookings in Decile that Smoke**	**All Bookings**	**% All Bookings by Decile**	**Number Smokers**	**% All Smokers by Decile**	**% Bookings in Decile that Smoke**
1	2597	21%	529	33%	20%	574	3%	171	8%	30%
2	1711	14%	250	15%	15%	1177	7%	275	13%	23%
3	1936	16%	304	19%	16%	1591	9%	298	14%	19%
4	1331	11%	156	10%	12%	1557	9%	239	12%	15%
5	1325	11%	140	9%	11%	1862	10%	242	12%	13%
6	1003	8%	109	7%	11%	2400	13%	253	12%	11%
7	881	7%	52	3%	6%	2367	13%	200	10%	8%
8	690	6%	42	3%	6%	2592	15%	187	9%	7%
9	357	3%	23	1%	6%	2041	11%	132	6%	6%
10	344	3%	13	1%	4%	1640	9%	74	4%	5%
Unknown	8	0%	1	0%	13%	16	0%	5	0%	31%
Total	**12183**		**1619**	**13%**	**13%**	**17817**		**2076**	**12%**	**12%**

Table 12.vii in appendix 12 provides an overview of booking and smoking by decile for Coventry and Warwickshire collectively and Tables 12.viii and 12.ix provide background population statistics by deprivation decile for the Coventry and Warwickshire populations for reference.

The PHE analysis of national maternity booking data [2] shows that those with an unknown smoking status are predominantly from the more deprived deciles (35% from decile 1). However, there is no apparent correlation between deprivation and unknown smoking status across Coventry and Warwickshire with 7% of those with unknown status belonging in IMD decile 1 (most deprived) and 5% from decile 10. The highest proportions of unknown smokers are across deciles 5 to 8, as shown in Figure 6.1.

Figure 6.1 Distribution of Those with Unknown Smoking Status by IMD Decile.



Key Findings: Smoking at Booking - numbers and geography

- **Across Coventry and Warwickshire each year an average of 885 women have an unknown smoking status at booking.**
- **GEH has the highest proportion with unknown status (15% in 2018/19), but unknowns have increased from 3% to 8% over the time period at UHCW**
- **Of those with known smoking status an average of 1368 women are smoking at booking each year, decreasing from 14% to 13% of total bookings over the review period.**
- **Each year Coventry has an average of 645 smokers identified at booking and Warwickshire an average of 723**
- **The highest proportion of smokers at booking live in Nuneaton and Bedworth (16%)**
- **At JSNA level smoking rates vary between 5% to 22% across Warwickshire JSNA areas and between 9% and 20% for Coventry JSNA areas**
- **At LSOA level the proportion of smokers ranges between 0% to 37%. In total across Coventry and Warwickshire there are 37 LSOAs with a proportion of smokers at booking greater then 25%.**
- **A higher proportion of bookings in the lowest IMD quintile in Warwickshire (53%) are smokers, than in Coventry where 35% of smokers are from the lowest quintile**
- **The % of women at booking who smoke is 5 to 6 times higher in the most deprived deciles compared to the least deprived deciles.**

7 Findings: Characteristics of Smokers vs Non-Smokers at Booking

7.1 Demographics and Co-morbidities of Smokers vs Non-Smokers

Table 7.1 provides a summary of key characteristics of the maternity bookings by Trust combined over the 3-year period comparing these features between cohorts defined by their smoking status at booking ie. smokers, non-smokers and smoking status unknown. It can be seen that as a group the smokers tend to be younger with an average age of 29 years for the cohort of smokers versus an average age of 32 for the cohort as a whole.

The non-smokers have a slightly more advance gestation at booking of 10.6 weeks compared to 10.4 weeks for all bookings and 10.1 weeks among the non-smokers. however, those with an unknown smoking status have the greatest gestation at booking at an average of 12.5 weeks. The smokers can be seen to be less ethnically diverse with 18% coming from BME groups as compared to 31% of all bookings and 34% among the non-smoker cohort.

A higher proportion of smokers have post-codes in the most deprived decile – 19% among the smoking cohort versus 10% among the non-smokers and similar patterns exist for the co-morbidities of obesity (29% among smokers vs 22% among non-smokers), mental illness (26% among smokers vs 13% among non-smokers) and alcohol use (2% among smokers vs 1% among non-smokers). The complex social care marker was applied to the record of 13% of smokers and 7% of non-smokers.

Table 7.1. Smoking Status and Other Characteristics/Co-Morbidities (Combined 3 years) by Trust – All Bookings

Characteristic	All Bookings n=30000	Smokers at Booking n=3695	Non-Smokers at Booking n=23844	Unknown Smoking n=2461
Average age (Range)	32 15-58	29 15-48	32 15-58	32 15-56
Average gestation (Range)	10.4 4-40	10.6 4-40	10.1 4-40	12.5 4-40
BME – Number (%)	9407 (31%)	675 (18%)	8146 (34%)	586 (24%)
Deprived – Number (%)	3171 (11%)	700 (19%)	2289 (10%)	182 (7%)
Smoker – Number[1] (%)	3695 (12%)	3695 (100%)	0	0
Obese– Number (%)	6616 (22%)	1084 (29%)	5347 (22%)	185 (8%)
MH – Number (%)	4299 (14%)	965 (26%)	3128 (13%)	206 (8%)
Alcohol – Number (%)	205 (1%)	64 (2%)	137 (1%)	4 (0%)
Complex Social Care–Number (%)	2185 (7%)	475 (13%)	1614 (7%)	96 (4%)

1. **As a proportion of the entire cohort (ie including those with an unknown smoking status)**

Table 7.2 shows the proportion of smokers at booking by age band and by Trust. Of all booking 25.4% were aged under 25 which closely equates with the nationally reported figure of 24.8% of all bookings.[2] In terms of smokers by age band it can be seen that the highest proportion of smokers are in the under 18 (29%) and 18 to 24 (27%) age bands. Of all smokers identified at booking 27% are aged under 25.

Table 7.2. Smokers vs Non-smokers at Booking by Age Band (3 years data combined)

	Number	Number (%) under 18	Number (%) 18 – 24	Number (%) 25-29	Number (%) 30-34	Number (%) 35-39	Number (%) 40+
UHCW Smokers	**2035**	6 (0.3)	523 (26)	596 (29)	527 (26)	276 (14)	107 (5)
UHCW Non-smokers	**12760**	14 (0.1)	1351 (11)	2942 (23)	4549 (36)	2858 (22)	1046 (8)
SWFT Smokers	**634**	1 (0.2)	157 (25)	196 (31)	148 (23)	92 (14)	40 (6)
SWFT Non-smokers	**6440**	0	376 (6)	1044 (16)	2210 (34)	2065 (32)	745 (11)
GEH Smokers	**1026**	4 (0.1)	246 (24)	338 (33)	249 (24)	144 (14)	45 (1)
GEH Non-smokers	**4644**	5 (0.1)	573 (12)	1199 (26)	1583 (34)	971 (21)	313 (7)
All Smokers	**3695**	11	926	1130	924	512	192
All Non-smokers	**23844**	19	2300	5185	8342	5894	2104
All Unknown	**2461**	8	248	589	850	561	205
Total Age Band	**30000**	38	3474	6904	10116	6967	2501
% of Age Band Smoking		**29%**	**27%**	**16%**	**9%**	**7%**	**8%**

Table 7.3 shows that ethnic group was recorded for 26704 (89%) of all bookings. As such the ethnic profile could be compared for 3484 smokers and 21333 non-smokers at booking. Among all smokers 81% were of white British/Irish ethnicity and 10% identified as being of 'white other' ethnic origin.

When looking at the proportions of the different ethnic groups who were smoking at booking 16% were of white British/Irish ethnicity, 17% of mixed race 12% of 'white other' groups (including Eastern European populations) and 9% of 'other ethnic' groups were smokers. This compares with national data[2] reporting that 16% of women of white British/Irish ethnicity smoke, 14% of mixed race and 7% of those belonging to 'other' ethnic groups.

Table 7.3. Total Smokers and Non-smokers by Ethnic Group

	Number (where ethnicity known)	**Number (%) White British/Irish**	**Number (%) White (other)**	**Number (%) Black/ Black British**	**Number (%) Asian**	**Number (%) Mixed Race**	**Number (%) Other Ethnic Group**
All Smokers	3484	2827 (81)	365 (10)	39 (1)	40 (1)	67 (2)	146 (4)
All Non-Smokers	21333	13276 (62)	2524 (12)	1218 (6)	2709 (13)	293 (1)	1313 (6)
Smoking status unknown	1887	1313 (70)	169 (9)	84 (4)	166 (9)	32 (2)	123 (6)
Total in ethnic group[1]	**26704[1]**	**17416**	**3058**	**1341**	**2915**	**392**	**1582**
Total (%) of ethnic group who smoke	**3484**	**2827 16%**	**365 12%**	**39 3%**	**40 1%**	**67 17%**	**146 9%**

[1] **Unknown ethnicity = 3296**

Table 7.4 summarises the number of co-morbidities each woman has at booking. Co-morbidities included were underweight (ie BMI below 18.5kg/m2), obese (ie BMI 30kg/m2 or above), mental ill-health, alcohol consumption and/or complex social care. Overall of the non-smokers 63% had no co-morbidities while this was true for only 45% of the smokers at booking. Overall 37% of non-smokers had one or more co-morbidity as compared to 55% of the smokers.

Table 7.4. Numbers of Comorbidities (CMs) by Smoking Status at Booking (combined populations over the 3 years)

Population	No.	0 CMs (%)	+ 1 CM (%)	+ 2 CMs (%)	+ 3 CMs (%)	+ 4 CMs (%)	+ 1 or more CMs (%)
All bookings	30000	18677 (62%)	9456 (32%)	1755 (6%)	109 (0%)	3 (0%)	11323 (38%)
Smokers	3695	1660 (45%)	1539 (42%)	442 (12%)	51 (0%)	3 (0%)	2035 (55%)
Non-smokers	23844	14999 (63%)	7520 (32%)	1269 (5%)	56 (0%)	0 (0%)	8845 (37%)
Unknown Smoking Status	2461	2018 (82%)	397 (16%)	44 (2%)	2 (0%)	0 (0%)	443 (18%)

7.2 Comparison with National Data on Smokers at Booking

Table 7.5 compares the characteristics of smokers identified at booking across Coventry and Warwickshire with the findings of the PHE analysis of national maternity booking data.[2] In summary the Table shows that on average there is a higher proportion of smokers at booking locally (13.4% of those with a known smoking status, compared to 12.7% nationally).

It can be seen that for Coventry and Warwickshire there is a lower proportion of booking records with unknown smoking status (12.2%) than for Coventry and Warwickshire (8%).

Coventry and Warwickshire smokers tend to be younger with 29% aged under 25 years as compared to 24.8% nationally. The deprivation profile of smokers at booking is more similar to the national profile for Coventry where women 20% of bookings who smoke are in the lowest decile and 48% of all the smokers are in the lowest quintile. For Warwickshire 30% of bookings from decile 1 smoke, whilst just 21% of all smokers are from the lowest quintile.

The ethnic profile of Coventry and Warwickshire smokers at booking is similar to the national profile, although nationally 21% of smokers are defined as having unknown ethnicity, while locally just 6.4% of smokers have unknown ethnicity

Table 7.5. Profile of Coventry and Warwickshire Smokers at Booking Compared to National Data

Variable	National Value	Coventry Value	Warwickshire Value	Coventry & Warwickshire Value
Unknown Smoking Status	12.2%	7%	9%	8%
Smoker at Booking[1]	12,7%	13%	11%	12%
% Aged under 25 who Smoke	24.8%	NA	NA	29%
% of Bookings in Most Deprived Decile that Smoke	21%	20%	30%	22%
% of Bookings in Least Deprived Decile that Smoke	3.7%	4%	5%	4%
% of all Smokers at Booking from Most Deprived Quintile	44%	48%	21%	22%
Proportion of Unknown Smoking Status in Most Deprived Decile	35%	NA	NA	7%
Proportion of Unknown Smoking Status in the Least Deprived Decile	11.3%	NA	NA	5%
Proportion of Smokers of White Ethnicity	15.9%	NA	NA	15.6%
Proportion of Smokers of Mixed Ethnicity	13.9%	NA	NA	17%
Proportion of Smokers of Asian Ethnicity	1.8%	NA	NA	1%
Proportion of Smokers of Other Ethnicity	7%	NA	NA	9%
Proportion of Smokers of Unknown Ethnicity	21%	NA	NA	6.4%

1 As % with known smoking status

7.3 Categorisation of Care Level at Booking

At booking women are assigned to consultant-led or maternity-led care based on a range of criteria reflecting their com-morbidities and the perceived level of risk. It can be seen in Table 7.6 that the level of care women are allocated to receive varies between the smoking and non-smoking cohorts with 56% of non-smokers and 69% of smokers being allocated to consultant-led care.

The proportion of women who receive consultant led care varies by Trust and by smoking status within individual Trusts. This detail is summarised in Table 12.x in appendix 12 and it shows that at UHCW 62% of women who smoke are allocated to consultant-led care, at SWFT 80% are and at GEH 75% are.

Table 7.6. Categorisation of Care Level Required (Consultant or Maternity) at Booking by Smoking Status

		Consultant (%)	Maternity (%)	Unknown Care Level(%)
All bookings	30000	17250 (58%)	12333 (41%)	417 (1%)
Smokers	3695	2534 (69%)	1126 (30%)	35 (1%)
Non-smokers	23844	13311 (56%)	10263 (43%)	270 (1%)
Unknown	2461	1405 (57%)	944 (38%)	112 (5%)

Likewise, at booking women are allocated to a level of care – standard, intermediate or intensive – that is associated with tariff payment. This categorisation is shown by smoking status in Table 7.7. It can be seen overall only a relatively small proportion (14%) of patients were allocated to the 'intensive' category of care and 12% of women who smoke were allocated to this category – a smaller proportion than in the non-smoking cohorts. However, a higher proportion of smokers – 54% were allocated to the intermediate category whilst this was the case for 36% of non-smokers. In total 46% of non-smokers were allocated to standard care as opposed to just 28% of the smokers.

Table 7.7. Categorisation of Care Level Required (Standard, Intermediate or Intensive) at Booking by Smoking Status

		Intensive (%)	Intermediate (%)	Standard (%)	Unknown Care Level (%)
All bookings	30000	4137 (14%)	11235 (37%)	13191 (44%)	1437 (5%)
Smokers	3695	426 (12%)	2006 (54%)	1038 (28%)	225 (6%)
Non-smokers	23844	3393 (14%)	8501 (36%)	10928 (46%)	1022 (4%)
Unknown	2461	318 (13%)	728 (30%)	1225 (50%)	190 (8%)

Key Findings: Characteristics and co-morbidities of smokers at booking

- **A higher proportion of smokers have a post-code in the most deprived decile (19%) than non-smokers (10%)**
- **Of all bookings aged under 18, 29% smoke as do 27% of those aged 18 to 24**
- **The majority of smokers – 91% - come from 'white' ethnic groups**
- **26% of smokers are recorded as having a mental illness as compared to 13% of non-smokers**
- **A higher proportion of smokers have co-morbidities, with 55% of smokers having one or more co-morbidity (not including smoking) compared to 37% of non-smokers.**

8 Findings: CO Measurement at Booking

8.1 CO Measurement and Smoking Status

Table 8.1 includes details of the proportion of bookings that had a CO measurement recorded. Generally, the proportion of records with a CO measurement at booking has increased – from 72% of records at SWFT in 2016/17 to 84% in 2018/19 and from 72% to 79% at GEH over the same period. However, at UHCW the proportion with a CO measurement decreased from a high of 89% in 2016/17 to 82% in 2018/19. Thus, the average proportion of records with a CO measurement across Coventry and Warwickshire decreased from 83% in 2017/18 to 82% in 2018/19.

Table 8.1. CO Measurement at Booking by Trust, by CCG, by LA

	2016/17		2017/18		2018/19	
	Total Number of bookings	Number (%) with CO measurement	Number of bookings	Number (%) with CO measurement	Number of bookings	Number (%) with CO measurement
UHCW*	2789	2488 (89)	6652	5626 (85)	6416	5264 (82)
SWFT	2463	1776 (72)	2384	1954 (82)	2476	2093 (84)
GEH	2231	1598 (72)	2311	1843 (80)	2278	1812 (79)
Total for Trusts	**7483**	**5862 78%**	**11347**	**9423 83%**	**11170**	**9169 82%**
CRCCG	2844	2486 (87)	6416	5523 (86)	6394	5317 (83)
SWCCG	2376	1780 (75)	2446	1958 (80)	2395	2023 (84)
WNCCG	2263	1596 (70)	2485	1942 (78)	2381	1829 (77)
Coventry	2203	1963 (89)	4994	4246 (85)	4986	4097 (82)
Warwickshire	5280	3899 (74)	6353	5177 (81)	6184	5072 (82)

*** UHCW data for 6 months only (October 2016 to March 2017)**

Table 12.xi in appendix 12 provides the information in Table 8.1 for District and Borough populations. This shows some differentials in CO measurement at booking – for example for the North Warwickshire borough in 2018/19 71% of women had a CO measurement recorded, whilst for the Nuneaton and Bedworth population 79% had a value recorded.

Tables 8.2a to 8.2d detail the number of records that had a valid CO measurement recorded at each Trust, by year for all bookings, (8.2a.) smokers at booking (8.2b), non-smokers at booking (8.2c) and those with an unknown smoking status (8.2d).
The numbers differ slightly to those in Table 8.1 in that whilst women may have had a CO reading taken this has not always been accurately recorded (eg. over the period 343 CO records at UHCW had a value of '-1'). These and other clearly erroneous values (eg values in excess of 1000) were excluded from the analyses below.

It can be seen in Table 8.2a that the proportion of records with a valid CO reading provided in this dataset varied by Trust with 68% of UHCW records having a valid reading, 80% of SWFT records and 77% of GEH Trust records. The proportion of records with a valid measurement has increased year on year at SWFT and GEH, but not so at UHCW.

It should be noted that the proportion of records with a valid CO measurement reported through the LMS will differ from the values reported here (and will be more accurate), because Trusts have the scope to remove the records of women from 'out of area' who did

not go through the full booking process with their Trust. However, CO readings at booking are not included on the LMS dashboard and so cannot be included here.

AT UHCW and GEH the overall proportion of records with a CO value of 4ppm or above averages at 20%, whilst at SWFT the overall proportion of records above 4ppm is just 12%.

Table 8.2a. Number of Bookings with CO Measurement at Booking by Trust – by Year

All records, all years					
	Bookings	**Number with valid CO reading**	**% with valid CO reading**	**Number with value >=4ppm**	**% with value >=4ppm**
UHCW					
2016/17*	2789	2007	72%	381	19%
2017/18	6652	4412	66%	823	19%
2018/19	6416	4307	67%	894	21%
	15857	**10726**	**68%**	**2098**	**20%**
SWFT					
2016/17	2463	1776	72%	227	13%
2017/18	2384	1954	82%	232	12%
2018/19	2476	2093	84%	255	12%
	7323	**5823**	**80%**	**714**	**12%**
GEH					
2016/17	2231	1598	72%	354	22%
2017/18	2311	1843	80%	361	20%
2018/19	2278	1812	80%	339	19%
	6820	**5253**	**77%**	**1054**	**20%**
All Trust Total	**30000**	**21802**	**73%**	**3867**	**18%**

* **UHCW data for 6 months only (October 2016 to March 2017)**

Table 8.2b details the CO measurement for those identified as smokers at booking. The overall proportion of smokers with a valid CO value ranges for 73% of all smokers at UHCW to 94% at GEH. At GEH and SWFT 82% of smokers had a reading of 4ppm or above, whilst at UHCW 77% did.

Table 8.2b. Number of Smokers with CO Measurement at Booking by Trust – by Year

All smokers, all years					
	Bookings	**Number with valid CO reading**	**% with valid CO reading**	**Number with value >=4ppm**	**% with value >=4ppm**
UHCW					
2016/17*	407	304	75%	244	80%
2017/18	843	579	69%	431	74%
2018/19	785	594	76%	458	77%
	2035	**1477**	**73%**	**1133**	**77%**
SWFT					
2016/17	234	169	72%	135	80%
2017/18	201	164	82%	140	85%
2018/19	199	169	85%	139	82%
	634	**502**	**79%**	**414**	**82%**
GEH					
2016/17	319	294	92%	257	87%
2017/18	363	344	95%	274	80%
2018/19	344	326	95%	264	81%
	1026	**964**	**94%**	**795**	**82%**
All Trust Total	**3695**	**2943**	**80%**	**2342**	**80%**

*** UHCW data for 6 months only (October 2016 to March 2017)**

Table 8.2c details the CO measurement for those identified as non-smokers at booking. The overall proportion of non-smokers with a valid CO value ranges for 71% of all non-smokers at UHCW to 92% at GEH. At GEH and SWFT 5% to 6% of non-smokers had a reading of 4ppm or above, whilst at UHCW overall years 10% did.

Table 8.2c. Number of Non-Smokers with CO Measurement at Booking by Trust –by Year

All non-smokers, all years					
	Bookings	**Number with valid CO reading**	**% with valid CO reading**	**Number with value >=4ppm**	**% with value >=4ppm**
UHCW					
2016/17*	2283	1689	74%	135	8%
2017/18	5391	3790	70%	387	10%
2018/19	5086	3598	71%	419	12%
	12760	**9077**	**71%**	**941**	**10%**
SWFT					
2016/17	2084	1527	73%	87	6%
2017/18	2133	1761	83%	88	5%
2018/19	2223	1886	85%	109	6%
	6440	**5173**	**80%**	**284**	**5%**
GEH					
2016/17	1466	1303	89%	97	7%
2017/18	1570	1496	95%	87	6%
2018/19	1608	1483	92%	72	5%
	4644	**4282**	**92%**	**256**	**6%**
All Trust Total	**23844**	**18533**	**78%**	**1481**	**8%**

*** UHCW data for 6 months only (October 2016 to March 2017)**

Table 8.2d details the CO measurement for those identified with smoking status unknown at booking. The overall proportion of those with an unknown status that had a valid CO value ranges from 1% of all unknowns at GEH to 59% at SWFT. Whilst the numbers are very small, at GEH 43% of those with unknown status had a value of 4ppm or above, whilst this was true for 10% of records at SWFT and 14% at UHCW.

Table 8.2d. Number with Unknown Smoking Status with CO Measurement at Booking by Trust –by Year

All unknown status, all years					
	Bookings	**Number with valid CO reading**	**% with valid CO reading**	**Number with value >=4ppm**	**% with value >=4ppm**
UHCW					
2016/17*	99	14	14%	2	14%
2017/18	418	43	10%	5	12%
2018/19	545	115	21%	17	15%
	1062	**172**	**16%**	**24**	**14%**
SWFT					
2016/17	145	80	55%	5	6%
2017/18	50	29	58%	3	10%
2018/19	54	38	70%	7	18%
	249	**147**	**59%**	**15**	**10%**
GEH					
2016/17	446	1	0%	0	0%
2017/18	378	3	1%	0	0%
2018/19	326	3	1%	3	100%
	1150	**7**	**1%**	**3**	**43%**
All Trust Total	**2461**	**326**	**13%**	**42**	**13%**

*** UHCW data for 6 months only (October 2016 to March 2017)**

Key Findings: CO Measurement at Booking

- **The proportion of records with a CO measurement at booking is generally, but not consistently, increasing. In 2018/19 82% of UHCW, 84% of SWFT and 79% of GEH booking records had a CO measurement.**
- **Over the 3-year period the proportion of records with a valid CO measurement at booking ranged from 68% at UHCW, 77% at GEH to 80% at SWFT**
- **Of women identified as smokers at booking overall 80% had a CO reading >=4ppm**
- **87% of those with an unknown smoking status did not have a valid CO reading and of those that did 13% had a value of >=4ppm**

9 Findings: Analysis of 36 Weeks and SATOD Data

9.1 Cohort with Outcome Data

In order to assess 36 week and SATOD outcomes it was necessary to remove records where it was thought that lack of outcome data (36 week and SATOD) reflected the fact that the woman had not continued to access maternity care at the provider where they had booked (ie women could have moved away, changed maternity provider for another reason, had a miscarriage or had a preterm birth). These could be considered as women 'lost to follow-up'.

Whilst we did not have a precise record of these events the assumption was made that where ALL of the following fields were blank for a woman, it was likely that she was no longer receiving care with that provider:

- 36-week smoking status
- 36-week CO measurement
- SATOD
- Breastfeeding status

On this basis the 30,000 Coventry and Warwickshire booking records were reduced by 4,232 to leave a total of 25,768 records. It is recognised that some records may have been removed that simply had all data items missing, but that on balance this is unlikely.

The cohort for assessment/data analysis at 36 weeks/SATOD thus differs in size from the cohort for which it was appropriate to assess characteristics at booking. The difference in the two cohorts is set out in Table 9.1 which shows that the largest proportion of the cases 'lost to follow-up' had an unknown smoking status at booking.

Table 9.1. Reduction in Cohort: Removing Those Assumed to be 'Lost to Follow-up'

Smoking Status at Booking	Booking Data Set Cohort	36-week + Data Set Cohort	Difference (%)
Smoker = Yes	3695	3216	479 (13%)
Smoker = No	23844	21174	2670 (11%)
Smoker = Unknown	2461	1378	1083 (44%)
Total Cohort	**30,000**	**25,768**	**4232 (14%)**

9.2 Analysis of SATOD Data by Populations

Table 9.2 shows the smoking at booking status for the cohort (n=25768) for whom there was follow-up data for the three years combined. It can be seen that there were 3216 smokers at booking and that this had reduced to 2591 smokers at delivery– a reduction of 625 (19%) smokers for the entire cohort over the period.

Table 9.2. Overview by Cohort with Outcome Data by Populations: Smoking at Booking and SATOD – 3 years combined

	Booking Data			Time of Delivery			
Population	**Total Number of bookings**	**Number with Known Smoking Status**	**Number (%) Smoking at Booking**	**Number with Outcome Data**	**Number with Known Smoking Status**	**Number (%) SATOD=Y**	**(%) Difference**
UHCW	13187	12333	1697 (14%)	13187	12922	1400 (11%)	297 (-17%)
SWFT	7323	7074	634 (9%)	7323	7153	520 (7%)	114 (-18%)
GEH	5258	4983	885 (18%)	5258	4507	671 (15%)	214 (-24%)
CRCCG	13144	12430	1718 (14%)	13144	12840	1437 (11%)	281 (-16%)
SWCCG	7108	6789	606 (9%)	7108	6929	483 (7%)	123 (-20%)
WNCCG	5516	5171	892 (17%)	5516	4813	671 (14%)	221 (-25%)
Coventry	10243	11497	1369 (12%)	10243	10015	1156 (11%)	213 (-16%)
Warwickshire	15525	16042	1847 (12%)	15525	14567	1435 (10%)	412 (-22%)
Coventry and Warwickshire	**25768**	**24390**	**3216 (13%)**	**25768**	**24582**	**2591 (10%)**	**625 (-19%)**

Table 9.3 shows the differences in smoking at booking compared to SATOD for each population by year. It can be seen that overall the annual reduction in the number of smokers between booking and delivery has been decreasing – from 28% of the cohort in 2016/17 to 14% in 2018/19. However, 2016/17 saw an unusually large difference in smoking between booking and delivery at GEH (47%), more than double the reduction seen in the subsequent two years (18% and 10% reductions).

Comparison with nationally reported SATOD data for Coventry and Warwickshire indicates quite close alignment with the statistics included in Table 9.3 for the years 2017/18 and 2018/19. While for 2016/17 the review only includes 6 months data for UHCW (so a comparison for CRCCG not possible) the data should be almost complete for WNCCG and SWCCG.

In 2017/18 there were 1043 smokers at time of delivery nationally reported (1001 in the review data) and in 2018/19 there were 980 nationally reported smokers (962 in the review data). However, in 2016/17 there were 194 nationally reported smokers at delivery for SWCCG as opposed to 162 shown through the review analysis (a difference of 32 smokers) and for WNCCG there were 225 nationally reported smokers at delivery as opposed to 153 in the review data. (a difference of 72 smokers).

Given the increased confidence in the data for 2017/18 and 2018/19 these 2 years will be used for comparative purposes.

Table 9.3. Outcome Data by Populations Per Annum: Smoking at Booking and SATOD

	2016/17			2017/18			2018/19		
Population	**SAB**	**SATOD**	**Difference**	**SAB**	**SATOD**	**Difference**	**SAB**	**SATOD**	**Difference**
GEH	275	147[2]	**128[2] (47%)**	313	256	**57 (18%)**	297	268	**29 (10%)**
SWFT	234	179	**55 (24%)**	201	180	**21 (10%)**	199	161	**38 (19%)**
UHCW[1]	338	284	**54 (16%)**	711	565	**146 (21%)**	648	551	**97 (15%)**
Coventry & Rugby CCG	354	295	**59 (17%)**	706	571	**135 (19%)**	658	571	**87 (13%)**
South Warwickshire	218	162	**56 (26%)**	196	171	**25 (13%)**	192	150	**42 (22%)**
Warwickshire North CCG	275	153	**122 (44%)**	323	259	**64 (20%)**	294	259	**35 (12%)**
Coventry	282	239	**43 (15%)**	554	453	**101 (18%)**	533	464	**69 (13%)**
Warwickshire	565	371	**194 (34%)**	671	548	**123 (18%)**	611	516	**95 (16%)**
Total	**847[1]**	**610[1]**	**237[2] (28%)**	**1225**	**1001**	**224 (18%)**	**1144**	**980**	**164 (14%)**

[1] 6 months data for UHCW 2016/17 [2] Questions over data quality -225 nationally reported SATOD for WNCCG

9.3 Smoking Status at Booking Compared to SATOD Status

Tables 9.2 and 9.3 show the change in the size of the cohorts of smokers at booking as compared to at delivery that will be used to assess outcomes. However, when comparing smokers at booking to smoking at delivery the relationship is not entirely straight forward, as not all of the women identified as smokers at delivery had been identified as smokers at booking as shown in Table 9.4

Table 9.4 shows that of the 3216 women who were smoking at booking 2199 (68%) were still smoking at delivery, 863 (27%) had stopped smoking and for 154 (5%) their smoking status was unknown.

Of the 21174 women documented as non-smokers at booking 286 (1%) were recorded as smokers at delivery and likewise 106 (8%) of those with an unknown smoking status at booking were also smokers at delivery. Thus, of women with known SATOD status a total of 392 – 2% of those with either unknown smoking status or who were recorded as non-smokers at booking - were recorded as smoking at delivery.

Overall 10% of women were recorded as smokers at delivery, 85% were non-smokers and 5% had an unknown SATOD status.

Table 9.4. SATOD Compared to Smoking at Booking

	Smoking at Booking			
	Yes 3216 (12%)	**No 21174 (82%)**	**Unknown 1378 (5%)**	**Total SATOD**
SATOD				
Yes	2199 (68%)	286 (1%)	106 (8%)	**2591 (10%)**
No	863 (27%)	20040 (95%)	1088 (79%)	**21991 (85%)**
Unknown	154 (5%)	848 (4%)	184 (13%)	**1186 (5%)**
				25768

Table 9.5 shows the SATOD rates as a proportion of those with a known SATOD status by year and by Trust. This reflects the approach used in national statistics and shows the overall proportions of women SATOD ranges from 16.1% to 14.7% at GEH, 7.5% to 6.6% at SWFT and from 12.4% to 10.7% at UHCW. However, it should be noted that data for GEH in 2016/17 is not robust, given the significant number of records with an unknown SATOD status. Data for 2018/19 at GEH and UHCW shows a small increase in SATOD compared to the previous year.

Table 9.5. SATOD by Year by Trust and as a Proportion of Those with Known SATOD Status

	2016/17				2017/18				2018/19			
Trust	**Cohort**	**Known Status**	**SATOD**	**SATOD as % Known**	**Cohort**	**Known Status**	**SATOD**	**SATOD as % Known**	**Cohort**	**Known Status**	**SATOD**	**SATOD as % Known**
GEH	1660	911	147	**16.1%**	1774	1772	256	**14.4%**	1824	1824	268	**14.7%**
SWFT	2463	2380	179	**7.5%**	2384	2332	180	**7.7%**	2476	2441	161	**6.6%**
UHCW*	2307	2285	284	**12.4%**	5536	5467	565	**10.3%**	5344	5170	551	**10.7%**

*** UHCW data for 6 months only (October 2016 to March 2017)**

Tables 12.xiia to 12.xiic and Tables 12.xiiia to 12.xiiic in appendix 12 give details of SATOD by CCG and Local Authority populations each year. For the CRCCG population the data shows SATOD to have decreased from 12.8% to 10.9% over the time period, for SWCCG the rate has decreased from 7.1% to 6.5% but for WNCCG SATOD has increased slightly in 2018/19 from 13.5% to 13.7% for all deliveries with a known SATOD status.

The proportion of deliveries with an unknown SATOD status was high for WNCCG (41%) in 2016/17 making the data for that year unreliable. However, those with unknown status decreased to 1% for WNCCG in 2018/19.

In appendix 12 Tables 12.xiva to 12.xivc show SATOD by District and Borough populations, This shows some year on year variation, for example the proportion of smokers at delivery increased for the Nuneaton and Bedworth population from 14% in 2017/18 to 15% in 2018/19.

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Tables 12.xva to 12.xvc show SATOD rates for Coventry JSNA areas, and Tables 12.xvia to 12.xvic in appendix 12 show this detail for Warwickshire JSNA areas. Whilst numbers are small at a JSNA level, there are some year on year variations – with increases in SATOD between 2017/18 and 2018/19 for the following JSNA populations:

- In Coventry: Park Edge Family Hub, Harmony Hub and Families for All Hub
- In Warwickshire: Bedworth Central, Bedworth West, Nuneaton Central, Kingsbury, Newbold and Brownsover, Weddington, Horestone Grange and Whitestone and Wellesbourne, Kineton and Shipston

SATOD is shown for LSOA populations with a rate >=20% in Tables 12.xvii and 12.xviii in appendix 12. The tables show that within the cohort of LSOAs with SATOD >=20% 11 LSOAs in Warwickshire have SATOD rates >=25% as do 4 LSOAs in Coventry.

9.4 Analysis of 36 weeks and SATOD Data

Table 9.6 details the 36 week and SATOD statistics recorded for cohorts by their smoking status at booking - smokers, non-smokers and those with an unknown smoking status by Trust. 36-week data could not be provided by SWFT and neither the GEH or UHCW data reflects the level of 36-week measurement that is reported elsewhere (there were technical difficulties in extracting data from Trust systems for the purposes of this review). However, it is recognised that Trusts do have systems to report this data through the LMS and are improving performance in this area, for example the LMS dashboard for Q2 2018/19 reported 36-week CO readings for 81% of UHCW, 85% of SWFT and 35% of GEH of records.

For GEH whilst a small overall proportion of women appear to have a 36-week CO measurement, smoking status was available for the majority of patients. Overall 765 (14%) of women were recorded as smokers at 36 weeks. This compares with 671 (13%) of women being recorded as smokers at time of delivery. On the basis that assessing smoking at 36 weeks should be more accurate, in particular because the assessment is associated with a CO reading, it could be that more women are smoking at delivery at GEH than are currently being identified.

Overall 11% of UHCW women were recorded as smokers at time of delivery as were 7% of SWFT deliveries.

Table 9.6 also details the number of women with an unknown smoking status at time of delivery and shows this as a proportion of the entire cohort. It can be seen that those with unknown status varies by Trust with 2% of women having an unknown SATOD status at UHCW and SWFT as compared to 14% at GEH.

Table 9.6 shows that overall 68% of all women were recorded as breast feeding at delivery, although this varied by Trust with just 40% of women recorded as breastfeeding at GEH, 72% at SWFT and 76% at UHCW. The differences in breastfeeding are best illustrated in Table 9.7 below.

Table 9.6. 36-week, SATOD and Breastfeeding Statistics at Delivery by Trust and by Smoking Status at Booking - 3 years Data Combined

At Booking		At 36-weeks				At Delivery			
	No.	**Number (%) with 36-week CO measurement**	**Number (%) smoking at 36 weeks**	**Number (%) not smoking at 36 weeks**	**Number (%) unknown smoking at 36 weeks**	**Number (%) SATOD= Yes**	**Number (%) SATOD= No**	**Number (%) SATOD= Unknown**	**Number (%) Breast feeding**
UHCW Smokers	**1697**	527 (31)	372 (22)	155 (9)	1170 (69)	1187 (70)	479 (28)	31 (2)	914 (54)
UHCW Non-smokers	**10636**	2576 (24)	42 (0.5)	2534 (24)	8060 (76)	147 (1)	10348 (97)	141 (1)	8510 (80)
UHCW Unknown smoking	**854**	80 (9)	10 (1)	70 (8)	774 (90)	66 (8)	695 (81)	93 (11)	656 (77)
UHCW Total	**13187**	**3183 24%**	**424 3%**	**2759 21%**	**10004 76%**	**1400 11%[1]**	**11522 87%**	**265 2%**	**10080 76%**
SWFT Smokers	**634**	410 (65)	Unknown	Unknown	Unknown	435 (69)	181 (28)	18 (3)	262 (41)
SWFT Non-Smokers	**6440**	1203 (19)	Unknown	Unknown	Unknown	72 (1)	6228 (97)	140 (2)	4866 (76)
SWFT Unknown smoking	**249**	52 (21)	Unknown	Unknown	Unknown	13 (5)	224 (90)	12 (5)	175 (90)
SWFT Total	**7323**	**1665 23%**				**520 7%[1]**	**6633 91%**	**170 2%**	**5303 72%**

GEH Smokers	**885**	219 (25)	634 (72)	235 (26)	16 (2)	577 (65)	203 (23)	105 (12)	208 (23)
GEH Non-smokers	**4098**	711 (17)	89 (2)	3971 (97)	38 (1)	67 (2)	3464 (84)	567 (14)	1760 (43)
GEH Unknown smoking	**275**	23 (8)	42 (15)	207 (75)	26 (9)	27 (10)	169 (61)	79 (29)	135 (49)
GEH Total	**5258**	**953 18%**	**765 14%**	**4413 84%**	**80 2%**	**671 13%[1]**	**3836 73%**	**751 14%**	**2103 40%**
Grand Total	**25768**	**5801 22%**	**1189 6%[2]**	**7172 39%[2]**	**10057 55%[1]**	**2591 10%[1]**	**21991 85%**	**1186 5%**	**17486 68%**

1 As proportion of all records, not just those with a known SATOD status 2. Excluding SWFT from denominator

Table 9.7 shows that of the 21,174 non-smokers at booking 15136 (71%) were recorded as breastfeeding at delivery whilst of the 3216 smokers at booking just 1384 (43%) were recorded as breastfeeding. For those with an unknown smoking status at booking 966 (70%) were recorded as breastfeeding at delivery.

Likewise, for those recorded as smoking at time of delivery just 1053 (41%) of women breastfed as opposed to 15802 (72%) of those who were not smoking at time of delivery.

Table 9.7. Breastfeeding According to Smoking at Booking and SATOD Status

	Breastfeeding						
Smoking at Booking	**Yes**		**No**		**Unknown**		**Total**
No	15136	71%	5077	24%	961	5%	**21174**
Yes	1384	43%	1617	50%	215	7%	**3216**
Unknown	966	70%	352	26%	60	4%	**1378**
Total	**17486**	**68%**	**7046**	**27%**	**1236**	**5%**	**25768**

	Breastfeeding						
SATOD	**Yes**		**No**		**Unknown**		**Total**
No	15802	72%	5219	24%	970	4%	**21991**
Yes	1053	41%	1366	53%	172	7%	**2591**
Unknown	631	53%	461	24%	94	4%	**1186**
Total	**17486**	**68%**	**7046**	**27%**	**1236**	**5%**	**25768**

In order to provide a more detailed picture of differences in smoking at booking and SATOD status at a more local level Tables 12.xixa to Tables 12.xixc in appendix 12 provide detail of the SATOD status for women who were smoking at booking by District and Borough populations.

In addition, Table 12.xx provides a count of women by District and Borough who were identified as either a non-smoker or had an unknown smoking status at booking but were then identified as a smoker at time of delivery. These are distributed across the District and Borough populations but the populations of Coventry, Nuneaton and Bedworth and Rugby tend to have a slightly higher proportion of women mis-identified at booking.

Key Findings: Smoking at 36 weeks and SATOD

- **Over the 3-year period, of the women who were identified as smokers at booking, 27% were recorded as non-smokers at delivery. However, 1% of those recorded as non-smokers at booking and 8% of those with an unknown smoking status at booking were also recorded as smokers at delivery.**
- **The proportion of women with a known SATOD status varied by Trust, with 2% of deliveries having an unknown status at UHCW and SWFT, compared to 14% at GEH. The proportion with unknown SATOD status has decreased over time at GEH and all records in the cohort for 2018/19 had a SATOD value.**
- **The difference in the number of smokers at booking compared to smokers at delivery has been reducing over the time period; there was an 18% reduction in 2017/18 and the difference was 14% in 2018/19**
- **Whilst technical difficulties affected the provision of 36-week data for the review, there is some evidence from GEH that more women may be smoking at delivery than are currently being recorded as a higher number of the cohort were recorded as smokers at 36 weeks.**
- **The SATOD rates as a proportion of those with a known SATOD status in 2018/19 was 6.6% at SWFT, 10.7% at UHCW and 14.7% at GEH.**
- **Each CCG has seen a small decrease in SATOD over the period, with the exception of WNCCG where there was a slight increase in 2018/19 to 13.7%**
- **There is a clear relationship between smoking and breastfeeding with 72% of women not smoking at delivery being recorded as breastfeeding as compared to 41% of smokers.**

9.5 Characteristics of Quitters vs Non-Quitters

Table 9.8 compares the characteristics of those who quit smoking during pregnancy versus those who did not. Whilst the average age is similar between the 2 groups, those who did not quit smoking during pregnancy tended to be more advanced in terms of gestation at booking – 10.3 weeks for those who quit, as compared to 11 weeks for those who continued to smoke.

A higher proportion of the quitters were from BME groups (24% among quitters, 16% among non-quitters) and there was a tendency towards greater co-morbidity among those who continued to smoke in terms of slight differences in obesity. mental ill-health, alcohol consumption and having complex social needs, as detailed in Table 9.8.

Table 9.8. Characteristics of Quitters vs Non-Quitters

Characteristic	Quitters		Non-Quitters	
	863		**2199**	
Average age (Range)	29 15-46		29 17-48	
Average gestation (Range)	10.3 4-40		11.0 4-40	
BME – Number (%)	205	24%	343	16%
Deprived – Number (%)	126	15%	450	20%
Obese– Number (%)	245	28%	648	29%
MH – Number (%)	220	25%	632	29%
Alcohol – Number (%)	9	1%	49	2%
Complex Social Care -– Number (%)	86	10%	309	14%

Table 9.9. compares the number of comorbidities documented at booking for those who quit smoking in pregnancy versus those who did not. Overall there was a slight tendency towards more co-morbidity among the non-quitters than the quitters, with more of the non-quitters (58%) having one or more co-morbidity than the quitters (53%).

Table 9.9. Number of Co-morbidities Quitters vs Non-Quitters

Population	Number	0 Co-morbidity (%)	+ 1 Co-morbidities (%)	+ 2 Co-morbidities (%)	+ 3 Co-morbidities (%)	+ 4 Co-morbidities (%)	+ 1 or more Co-morbidities %
Quitters	863	408 (47%)	357 (41%)	91 (11%)	7 (1%)	0	455 (53)
Non Quitters	2199	933 (42%)	935 (43%)	293 (13%)	35 (2%)	3 (0%)	1266 (58%)

Key Findings: Quitters vs Non-quitters

- **There is some evidence that those who do not quit smoking during pregnancy book for maternity care later, are less ethnically diverse and tend to have more co-morbidities**

9.6 Applying Review Findings to Estimate the Number of Quitters

The review findings can be used to indicate the total likely number of both smokers at booking (those identified as smokers and those not) and the likely number of quitters.

Table 9.10 uses the review data to estimate the annual number of bookings for Coventry and Warwickshire across the 3 Trusts based on an average of the last 2 years bookings (ie 11260 bookings per annum). Of these 12% are expected to be identified at booking as smokers. In addition, 198 (2%) of the remaining bookings are also assumed to be smokers (ie. 2% of those identified as non-smokers or with an unknown smoking status were found to be smokers at delivery). On this basis the total cohort of smokers at booking is estimated to be 1549. This cohort might actually be larger – in that some identified as non-smokers or with an unknown smoking status at booking may go on to quit before delivery, but this cannot be assumed.

Table 9.10. Estimate of Total Smokers at Booking

Average Annual Bookings	Smokers at Booking (12%)	Cohort of Unknown or Non-smokers	Smokers Recorded as Non-smokers or Unknown (2%)	Total Smokers
11260	1351	9909	198	1549

Using the national SATOD returns[41] the average number of deliveries for Coventry and Warwickshire have been calculated using data for the years 2017/18 and 2018/19. This indicates that there are on average 9654 deliveries – 1606 (14%) less deliveries than bookings.

Table 9.11 assumes that the 14% reduction applies equally across the entire booking cohort (ie smokers and non-smokers equally) in order to allow an estimate of the number of quitters based on the review findings. This would mean that 217 of the 1549 smokers at booking do not deliver (ie miscarriage or deliver elsewhere). The review findings demonstrate that 27% of those identified as smokers at booking were recorded as non-smokers at delivery. This would equate to 365 of the 1351 smokers identified at booking quitting prior to delivery.

Table 9.11. Estimate of Total Smokers at Delivery Compared to Smokers at Booking

Cohorts	Numbers
Total Smokers at Booking	1549
Proportion of Bookers That Do Not Deliver (14%)	217
Number that Quit (27%)[1]	365
Smokers at Delivery	967

[1] **27% of those identified as smokers at booking**

The estimate in Table 9.11 has some validity in that the assumed number of smokers at delivery (967) do roughly equate with the average of 1002 smokers reported through the SATOD data for Coventry and Warwickshire. On this basis it is estimated that approximately 365 smokers quit between booking and delivery.

These estimates are predicated on SATOD figures being accurate, which may not be the case as it was reported through the review that smoking status at delivery may be assumed to be the same as smoking at booking in some instances (so possibly over-estimating those

smoking at delivery). However, if smoking status at booking was assumed to apply at delivery there is a chance that some of those wrongly identified as non-smokers at booking are equally being mis-classified as non-smokers at delivery.

Counter to the possible over-estimate of SATOD there is also some indication from the review findings that there may be an under-estimate of smokers at delivery. For GEH a high proportion of women had smoking status at 36-weeks recorded (98%) and of those with a recorded status 765 (14%) were identified as smokers. However, at time of delivery within the same cohort just 671 (13%) were recorded as smoking at delivery.

Key Findings: Estimated number of quitters per annum

- **It is estimated that there are approximately 1549 Smokers at Booking across Coventry and Warwickshire each year (ie those identified as smokers and those recorded as non-smokers or with an unknown status)**
- **Applying the review findings, it can be estimated that approximately 365 of those smoking at booking quit before delivery.**

10 Findings: Birth Outcomes and Smoking Status

10.1 Stillbirth, Preterm and Birthweight Data

In order to enable an estimate of the impact of smoking on birth outcomes UHCW and SWFT provided aggregated data for a total of 30,005 births. The data was separate to the main review data and included smoking at delivery status, birth outcome (stillbirth or live birth) gestation at birth and birthweight.

Fuller details of the data are provided in Table 12.xxi in appendix 12. For SWFT 11,380 births were included over the period 2016/17 to 2019/20 and for UHCW 18,625 births were included for the period 2016/17 to 2018/19. GEH were unable to provide equivalent data within the timescale of this review.

Table 10.1 shows details of a reconciliation between the count of total births as provided by the Trusts, alongside a count of births by gestation and the count of births by birthweight. It can be seen that there are some discrepancies that may impact on the overall rates used for comparison. However, it is assumed that the differences in the counts of births by gestation and by birthweight are distributed across the full spectrum of gestation and birth weight, and as such will not invalidate the comparison of rates between smokers and non-smokers.

Table 10.1. Difference in Counts of Gestation and Birthweight Compared to Total Births

		Difference in count of gestation			Difference in count of birth weight		
	Total Births	Count of gestation	Difference	Difference as rate per 1000 births	Count of birthweight	Difference	Difference as rate per 1000 births
Smokers	2611	2622	11	4.2	2619	8	3
Non-Smokers	26545	26602	57	2.1	26591	46	1.7
Unknown	849	827	(22)	26	802	(47)	55

In this dataset the overall number of stillbirths was 111 giving a rate of 3.7 per 1,000 total births, the overall proportion of low birthweight (LBW) babies (ie birthweight <2.5kg) was 7.9% and the overall proportion of preterm births (gestation less than 37 weeks) was 9%. This data is shown in Table 10.2 alongside statistics for the West Midlands population. The West Midlands statistics show broad comparability with the statistics derived from this data set adding confidence to its validity.

Table 10.2. Comparison of Statistics with West Midlands Values and Rates

		Stillbirths		LBW		Preterm Births	
	Total Births	Stillbirths	Stillbirth Rate*	LBW	LBW %	Preterm	Preterm %
All births	30,005	111	3.7	2383	7.9%	2724	9%
West Midlands[1]	67282	309	4.6	5730	8.5%	5865	8.7%

***rate per 1,000 births [1] Source: ONS Birth Characteristics data set 2018**

Table 10.3 shows the number and rates of stillbirths according to smoking at delivery status together with the number and rate of preterm births. It can be seen that the rate of preterm

births is highest among those with an unknown smoking status (11.8). The rate of stillbirth among the smokers is 6.1 per 1,000 births as compared to a rate of 3.2 among the non-smokers.

In comparing rates of preterm births those with unknown smoking status again show the highest rate in the <=27 week and the <=32-week gestation categories. The rates in the 3 gestation categories can be seen to be higher in the smokers than in the non-smokers – 15.3 vs 7.2, 42.9 vs 19.5 and 151.7 vs 83. The proportion of all preterm births was 15% among the smokers as compared to 8% among the non-smokers.

Table 10.3. Stillbirths and Preterm Births by Smoking Status

	Total Births	Stillbirths		Gestation in weeks Number and rate*					
		No.	Rate	N= <=27	<=27 rate	N= <=32	<=32 Rate	N= <37 (%)	<37 rate
Smokers	2611	16	6.1	40	15.3	112	42.9	396 (15%)	151.7
Non-Smokers	26545	85	3.2	190	7.2	517	19.5	2203 (8%)	83.0
Unknown	849	10	11.8	25	29.4	50	58.9	125 (15%)	147.2

***rate per 1,000 births**

Table 10.4 shows the count and the rate of low birthweight babies by smoking at delivery status. Whilst the unknown category has the highest rate overall, the rate of babies born <1.5kg is 31.8 among the smokers and 14.1 among the non-smokers and the rate with a birthweight 1.5-2.49kg was 129.5 among the smokers and 55.9 among the non-smokers. The proportion of total LBW babies was 16% among the smokers and 7% among the non-smokers.

Table 10.4. Stillbirths Low Birthweight by Smoking Status

		Birthweight in kg Number and rate*				
	Total Births	<1.5	Rate <1.5	1.5-2.49	Rate 1.5-2.49	Total LBW (%)
Smokers	2611	83	31.8	338	129.5	421(16%)
Non-Smokers	26545	374	14.1	1485	55.9	1859 (7%)
Unknown	849	35	41.2	68	80.1	103 (12%)

***rate per 1,000 births**

Key Findings: Birth outcomes and smoking status (SATOD)

- **The overall rate of stillbirth was 3.7 per 1,000 births but among the smokers it was 6.1 as compared to a rate of 3.2 among the non-smokers**
- **The overall proportion of preterm births (less than 37 weeks gestation) was 8.7%. The proportion among smokers was 15% as compared to 8% among the non-smokers**
- **The overall proportion of LBW babies (less than 2.5kg) was 7.9%. The proportion among smokers was 16% as compared to 7% among the non-smokers**

11 Findings: Specialist Smoking in Pregnancy Service Data

11.1 Access to Specialist Smoking Cessation Services

The three maternity services and the Warwickshire smoking service were asked to provide data for the 3-year period 1st April 2016 through to 31st March 2019. UHCW provided data from 1st September 2016 (hence some missing maternity data mainly relating to Rugby women for the period April to September 2016, as described in the maternity data analysis section of the report).

The Warwickshire smoking service provided data for the period from 1st October 2016 to 30th September 2019. This means there is no smoking service data relating to the period 1st April 2016 to 1st October 2016 to match the maternity records received from GEH and SWFT for this period, but overall there is 2.5 years of data corresponding to the same time period ie. 1st October 2016 to 31st March 2019 for the maternity providers and the Warwickshire specialist smoking service.

The Warwickshire smoking service data set included 2,386 records of which 1,991 records covered the period to 31st March 2019 (the remaining records covered the period with no corresponding maternity data April to September 2019).) Of the 1991 records 1841 relate to Warwickshire residents and were included in the analysis.

The Coventry specialist smoking service has only recently introduced electronic records and as such were able to provide detailed data for the period 1st September 2018 to 31st March 2019. The detailed data provided by the Coventry service included two separate files:

- One with brief details of the 410 referrals received by the service for the period September 2018 to March 2019
- A second file including 248 ‘Quit Manager’ records (ie treatment details) associated with the 410 referrals

The details in these two files were matched using surname, date of birth and postcode and on this basis 171 files could be matched with each other.

Alongside this detailed data, aggregate data was also provided by the Coventry service for the period April 2016 to September 2019 which has helped to inform this review.

In the following analyses data received from the specialist stop smoking services has been related to the data provided by maternity services so the relationship between the 2 service data sets can be described, accepting that there will be limitations in terms of the conclusions that can be drawn. The intention is to, in future, join the maternity data set with the smoking service data sets at a patient level so that more detailed analysis can be undertaken.

Table 11.1 shows the smokers at booking as identified in the maternity data set for Warwickshire residents, compared to the number of unique referrals made by the Community Midwife (CMW) teams at each Trust. The analysis was restricted to ‘unique’ referrals by excluding ‘duplicate referrals’ (re-referrals) that are quite properly made when women fail to engage with the service. However, the purpose of Table 11.1 was to try to identify if women recorded as smokers at booking are being referred for specialist support.

For Warwickshire, in order to quantify the number of smokers identified at booking (and hence the number that should be referred for support), a count of the Warwickshire only smokers at SWFT and GEH was made, and for UHCW Rugby only smokers were identified. These numbers were then compared to the number of referrals received by the smoking

service from the respective CMW teams on the understanding that referrals for Warwickshire smokers are made as follows:

- Rugby CMWs make the UHCW referrals
- South Warwickshire CMWs make the SWFT referrals
- North Warwickshire CMWs make the GEH referrals

There were a total of 1663 CMW referrals received by the Warwickshire service over the 2.5-year period of the analysis (October 2016 to March 2019). Other referrals will have been made by Health Visitors and other health care professionals during this period. Of the 1663 records there were 32 repeat referrals identified for women leaving 1631 total records that could theoretically be related to smokers at booking.

Table 11.1 shows that for SWFT the number of referrals received by the specialist service closely equates to or, more recently, exceeds the number of smokers identified at booking. For GEH for each time period the number of referrals received exceeds the number of women identified as smokers at booking. The Warwickshire bookings at UHCW were restricted to those for women from Rugby. It can be seen that for the Rugby smokers at booking at UHCW, the number of referrals received by the Warwickshire service does exceed the number of smokers at booking in 2016/17. in 2017/18 there appears to be considerably less referrals than smokers (147 smokers at booking vs 113 Rugby referrals received) and in 2018/19 the number of referrals received more closely equates to the number of smokers at booking.

Table 11.1. Number of Warwickshire Smokers Identified at Booking Compared to Number of Smoking Service Referrals Received

	Oct 2016 to March 2017			April 2017 to March 2018			April 2018 to March 2019		
	UHCW	**SWFT**	**GEH**	**UHCW**	**SWFT**	**GEH**	**UHCW**	**SWFT**	**GEH**
Number of Warwickshire Smokers	55 Rugby	104	163	147 Rugby	190	335	100 Rugby	172	291
Number of unique referrals received by SSiP Service	72	93	201	113	183	366	93	195	315

Referrals from community midwives – 1,663 records. Duplicate referrals removed (32 records) leaving 1,631 records.

Table 11.2 shows the number of Coventry smokers identified at booking at the 3 Trusts together with the aggregate data from the Coventry smoking service for the years 2016/17 (half of annual aggregate total assumed for period October to March, given only 6 months maternity data from UHCW for 2016/17), and for 2017/18. The aggregated nature of the smoking service data did not provide any potential for re-referrals to be identified as a subset of the total referrals.

For 2018/19 the year was split into 2 cohorts. For the period April to August 2018 a five-month split of the aggregate data was used, and for the period September 2018 to March 2019 the referral data provided specifically for this review was used for comparison to the number of smokers identified at booking.

Table 11. 2. Number of Coventry Smokers Identified at Booking Compared to Number of Smoking Service Referrals Received.

			April 2018 – March 2019		
	October 2016 – March 2017	**April 2017 – March 2018**	**April 2018 – August 2018**	**September 2018 – March 2019**	**April 2018 – March 2019**
UHCW	303	580	270	335	605
SWFT	2	7	6	0	6
GEH	5	12	6	8	14
Total Coventry Smokers	**310**	**599**	**282**	**343**	**625**
Referrals received	**357**	**660**	**276**	**410**	**683**

Table 11.2 illustrates that for each time period the number of referrals received by the Coventry smoking service exceeds the number of smokers identified at booking, with the exception of data in the period April 2018 to August 2019, however this apparent difference is a consequence of the apportionment of the data, as overall for the year April 2018 to March 2019 (final column of the table) the number of referrals received by the service does exceed the number of smokers identified at booking.

Whilst Tables 11.1 and 11.2 do indicate that those identified as smokers at booking are by and large being referred there cannot be certainty on this, because on average each year across Coventry and Warwickshire there are approximately 130 women identified as smokers at delivery who were not identified as smokers at booking (ie at booking their smoking status was unknown or they were categorised as a non-smoker). It is possible that at least some of these women will have been identified as smokers during the antenatal period and referred for specialist support, but the precise number cannot be quantified from this data.

Table 11.3 provides an overview of all the referrals received by the Coventry and Warwickshire specialist smoking services together with high level outcomes. In order to distinguish outcomes associated with whether clients accessed the service or not those referred are categorised as either ‘engagers’ or ‘decliners’. For Warwickshire referrals were categorised as either ‘engagers’ or ‘decliners’ based on the following criteria:

- ‘Decliners’ were identified as those with a ‘blank’ ‘First session date’ together with a ‘blank’ ‘Quit Date’ (some with a ‘blank’ ‘first session date’ did go on the set a quit date, so this criterion could not be used independently).
- ‘Engagers’ were those who had a ‘first session date’ and/or a ‘quit date’.

For the Coventry service the aggregated data provided by the service had already been split into those deemed to have engaged with the service as opposed to those who did not.

11.2 Outcome for Smokers Referred for Support

Table 11.3 shows that the total number of referrals received each year by each service fluctuates, with no particular trend, although the Warwickshire service has seen a decline in the overall number of referrals received between 2017/18 (754 referrals) and 2018/19 (675 referrals).

Over the period (3 full years for Coventry) the Coventry service received a total of 2,057 referrals. Each year between 364 and 428 (53% to 60%) of the referrals engaged with the service (accepted and attended at least one appointment). Of those referred between 307 and 347 women (46% to 49%) set a quit date each year. This equates to between 81% and 89% of those engaging with the service, setting a quit date.

For Coventry the number who successfully quit (ie a 4-week quit) ranged between 135 and 153 clients each year – between 20% and 24% of those referred. The successful 4-week quitters made up between 36% and 43% of those engaging with the service and between 42% and 51% of those setting a quit date.

For Coventry, each year between 82% and 93% of the 4-week quits were CO verified.

Table 11.3. Overview of Referrals and Outcomes for the Coventry and Warwickshire Specialist Services

	2016/17		2017/18 April 2017 to March 2018		2018/19 April 2018 to March 2019	
	(April 2016 to March 2017)	(October 2016 to March 2017)				
	Coventry	Warwickshire	Coventry	Warwickshire	Coventry	Warwickshire
Number of referrals	714	412	660	754	683	675
Number (%) engaged with service[1]	428 (60%)	163 (40%)	367 (56%)	312 (41%)	364 (53%)	284 (42%)
Number set quit date – (%) of referrals	347 (49%)	134 (33%)	307 (46%)	246 (33%)	323 (47%)	190* (28%)

Set quit date – (%) of those engaging	(81%)	(82%)	(84%)	(79%)	(89%)	(67%)
Number quit (%) of referrals	153 (21%)	71 (17%)	157 (24%)	124 (16%)	135 (20%)	117* (17%)
Quit – (%) of those engaging	(36%)	(44%)	(43%)	(40%)	(37%)	(35%)
Quit – (%) of quit dates	(44%)	(53%)	(51%)	(50%)	(42%)	(62%)
Number (%) quitters CO verified	142 (93%)	55 (77%)	137 (87%)	101 (81%)	111 (82%)	101 (86%)

[1]**Engagement was defined on the basis that 'decliners' were those with a 'blank' 'First session date' and a 'blank' 'Quit Date'. Excluding these records gave the number engaging with the service. For Coventry 'engagers' were defined in the aggregated return.**
***Nationally reported data shows 235 set QD and 130 quit (national data will include a small number referred to general smoking cessation services**).

The summary statistics for Warwickshire shown in Table 11.3 were produced through analysis of the 1841 referrals for Warwickshire residents received by the service (October 2016 to March 2019). Each year between 675 and 754 referrals were received and of these between 284 and 312 women (40% to 42%) engaged with the support offered by the service. For the years with full data, between 190 and 246 women (28% to 33%) set a quit date. Those setting a quit date thus make up between 67% and 82% of those engaging with the service.

The number of clients who achieved a 4-week quit ranged between 117 and 124 (for years with complete data). The 4-week quitters made up between 16% and 17% of those referred; between 35% and 44% of those engaging with the service and between 50% and 62% of those setting a quit date.

Between 77% and 86% of Warwickshire's 4-week quits were CO verified.

Table 4.3 in the earlier section of the report detailing nationally reported data shows that for 2017/18 for Warwickshire there were 279 women setting a quit date of whom 125 quit and in 2018/19 the national report shows 235 women set a quit date and 130 quit. The national data does include Warwickshire women setting a quit date with non-specialist providers. It is estimated that about 37 women set a quit date in 2019/20 with non-specialist providers and whilst the data is not available for 2018/19 this could explain the difference seen between the data reported here and the nationally reported statistics.

Table 11.4 illustrates how the uptake of specialist smoking services and the outcomes vary for the Warwickshire population depending on district of residence or CCG. It can be seen that a lower proportion of women from Nuneaton and Bedworth (35%) and Rugby (32%) engage with the service, as compared to other areas (43% to 50%).

In terms of the proportion of all referrals that set a quit date – this ranges from 25% of all referrals from Rugby and Nuneaton and Bedworth, as compared to 40% of those from Warwick setting a quit date. However, as a proportion of those that engage with the service more similar proportions go on to set a quit date, although Nuneaton and Bedworth clients have the lowest proportion of those engaged with the service setting a quit date (70%) and Warwick the highest (80%).

In terms of those successfully achieving a 4-week quit, this ranges from 11% of those referred in North Warwickshire to 23% of those referred from Stratford upon Avon and from 33% of the total setting a quit date (North Warwickshire) to 61% of those from Stratford Upon Avon.

Table 11.4. Warwickshire Smoking Referrals and Outcomes by District and Borough and CCG Populations

	2016/17 to 2018/19 (October 2016 to March 2019)						
	Number of referrals	**Number[1] (%) Engaging**	**Number set Quit Date (%) of all referrals**	**Quit Date % of those Engaging**	**Number quit (%) of all referrals**	**% of those setting quit date**	**Number (%) quitters CO verified**
By District/Borough:							
North Warwickshire	214	91 (43%)	72 (34%)	80%	24 (11%)	33%	18 (75%)
Nuneaton & Bedworth	696	247 (35%)	174 (25%)	70%	104 (15%)	60%	84 (81%)
Rugby	307	99 (32%)	78 (25%)	79%	43 (14%)	55%	36 (84%)
Stratford-on-Avon	282	150 (53%)	109 (39%)	73%	66 (23%)	61%	53 (80%)
Warwick	342	172 (50%)	137 (40%)	80%	75 (22%)	55%	66 (88%)
Warwickshire	**1,841**	**759 (41%)**	**570 (31%)**	**75%**	**312 (17%)**	**55%**	**257 (82%)**
By CCG:							
Warwickshire North CCG	910	338 (37%)	246 (27%)	73%	128 (14%)	52%	102 (80%)
Coventry & Rugby CCG[2]	307	99 (32%)	78 (25%)	79%	43 (14%)	55%	36 (84%)
South Warwickshire CCG	624	322 (52%)	246 (39%)	76%	141 (23%)	57%	119 (84%)

1 Engagement was defined on the basis that 'decliners' were those with a 'blank' 'First session date' and a 'blank' 'Quit Date'. Excluding these records gave the number engaging with the service. 2 Rugby only

Table 11.5 provides overview statistics for the referrals from all sources received by the two smoking services together with some additional details about the treatment received and with service outcome (ie achievement of a 4-week quit). For Table 10.5 there was 2.5 years of Warwickshire data and 7 months data for the Coventry service. For the Coventry analysis some of the statistics (such as time to treatment) were derived from the 171 records that could be matched between the referral data file (n=410) and the Quit Manager file (n=248), as shown in the table.

In terms of all of the referrals received a higher proportion of Coventry's referrals were from midwives (99%), as compared to Warwickshire where 16% of referrals were received from others (eg. Health Visitors). For the Warwickshire service, of the 1841 referrals 759 (41%) accepted the support and engaged with the service.

For the Coventry service 248 of the 410 referrals received (60%) had a Quit Manager record (indicating acceptance of the service). A small number of the 248 records are likely to relate to referrals received before 1st September (ie the referral is not included in the count of 410), but as these could not be reliably identified from the data available, they were not excluded.

The average number of days to the first 'face to face' appointment was 17 days for the Warwickshire service and 11 days for the Coventry service. This was determined by comparing the date the referral was received to the date of the 'first session'. Face to face appointments are negotiated with the client and so delays do not necessarily reflect service capacity and will to an extent reflect the availability of the women themselves.

A higher proportion of all women referred seta quit date in the Coventry service (48%) than in the Warwickshire service (31%), although again a small number of the Coventry clients setting a quit date could relate to referrals received prior to the 1st September.

The average number of days from receipt of the referral to the quit date was 23 days for the Warwickshire service and 18 days for the Coventry service.

The proportion of the initial referrals engaging with the service was 41% for Warwickshire and 60% for Coventry referrals (although this may be overstated as referenced above). Of those defined as engaging with the service in Warwickshire 75% went on to set a quit date, whilst for Coventry 79% of those engaging set a quit date

When looking at the number who quit, as a proportion of total referrals, this was 17% of referrals to the Warwickshire service and 22% of all referrals to the Coventry service. As a proportion of the total engaging with the service the quitters ranged from 36% in Coventry to 41% of those who engaged in Warwickshire. The number who quit as a proportion of the total setting a quit date ranged from 46% for the Coventry clients to 55% of the Warwickshire clients.

A slightly lower proportion of the Warwickshire quitters (93%) used NRT to aid their quit attempt, as opposed to 100% of quitters in Coventry.

Coventry clients can be seen to have had more appointments on average both for quitters (8 appointments in Coventry, 4.9 in Warwickshire) and for non-quitters (3.3 appointments in Coventry, 2.1 in Warwickshire).

Table 11.5. Referral and Service Provision Overview for Coventry and Warwickshire Smoking Cessation Services

Data item/characteristic	Warwickshire (2.5 years data)	Coventry (7 months data)
Total referrals received	1,841	**410** referrals received for which there were **248** Quit Manager records
Source of referral midwife (% of total referrals)	1,550 (84%)	404 (99%)
Source of referral other	291 (16%)	6 (1%)
Number engaging with the service[1] (% of total referrals)	759 (41%)	248 of 410 (60%)[2]
Average number of days to first appointment for those who engaged	17	11[3]
Number setting quit date (% of total referrals)	570 (31% of 1841)	195 (48% of 410)
Average number of days to quit date for those who did engage	23	18[3]
% of those engaged setting quit date	570 (75% of 759)	195 (79% of 248)
Number (%) of those setting quit date prescribed NRT	530 (93% of 759)	193 (99% of 195)
Number who quit (% of total referrals)	312 (17% of 1841)	89 (22% of 410)
Number who quit (% of total engaged)	312 (41% of 759)	89 (36% of 248)
Number who quit (% of total setting a quit date)	312 (55% of 570)	89 (46% of 195)
Number (%) of quitters who received NRT	93% (290 of 312)	89 (100%)
Average appointments per quitter	4.9	8.0[3]
Average appointments per non-quitter	2.1	3.3[3]

1 Engagement was defined on the basis that 'decliners' were those with a 'blank' 'First session date' together with 'blank' 'Quit Date'. Excluding these records gave the number engaging with the service.
2 A small proportion of the 248 records will relate to referrals received prior to September 1st 2018 and as such the number and % engaging is likely to be slightly over-stated
3 Calculated from file containing matched data (171 records)

Table 11.6 shows details of the smoking service activity and outcomes relative to the respective service budgets. Drawing direct comparisons between the services is not advised as they cover very different geographical areas and have different staffing structures. In addition, the staff in the Coventry service report working 'above and beyond' their contracted

duties and as such their delivery is not considered sustainable. Nonetheless the data shows that between the services the costs of those engaging ranges from £311 in Coventry to £671 in Warwickshire and the cost per quitter ranges from £811 per 4-week quit in Coventry, through to £1667 in Warwickshire.

Table 11.6. Cost Per Head of Those Engaging and Those Quitting

	Coventry Service	Warwickshire Service
Total service budget excluding NRT)	£120,000	£200,000
Average cost per individual engaging with the service.	Average number engaging over 3 years = 386 PA **£311 per person engaging**	Average number engaging over 2 years = 298 PA **£671 per person engaging**
Average cost per individual setting a quit date	Average number setting a quit date over 3 years = 326 PA **£368 per QDS**	Average number setting a quit date over 2 years = 218 PA **£917 per QDS**
Average cost per individual achieving a 4-week quit.	Average number achieving a 4-week quit over 3 years 148 PA **£811 per 4 week-quit**	Average number achieving a 4-week quit over 2 years 120 PA **£1667 per 4 week-quit**

11.3 Contribution of 4-week Quits to Overall Cessation Rates

There is no way of precisely quantifying the contribution that the smoking services – or more particularly the 4-week quitters – make to the overall reduction in the numbers of smokers seen between booking and time of delivery.

Based on the review findings it is estimated that there are approximately 365 smoking quitters per annum across Coventry and Warwickshire. As shown in Table 11.6 across the two smoking services there is an average of 268 quitters per annum. Not all of the smoking service quitters may sustain their quit status until delivery, but if they did, they would account for approximately 73% of all quits achieved between booking and delivery.

A further issue is the extent to which the recording of SATOD status is accurate, as referenced above. Discussion with midwives as part of this review has indicated that in some instances the recording of SATOD status is based on the smoking status recorded at booking and may not reflect true smoking status at delivery, but there is equally some evidence indicating that the proportion of smokers identified at 36 weeks may be higher than the proportion identified at delivery (GEH hospital data only).

Whilst the precise relationship between the outcomes of the smoking services and the reduction in the number of smokers across the antenatal pathway cannot be quantified, the fact that there are services to refer to will no doubt have a bearing on the willingness of a midwife or any other healthcare professional to offer VBA (ie if there is no service to refer to professionals could understandably be less willing to raise the issue of smoking). Many women may quit on the basis of high-quality VBA which might otherwise not be delivered. In this way the true value of the smoking services cannot be quantified.

11.4 Referrals by Deprivation Decile

Warwickshire Referrals by Deprivation Decile

Given the larger data set available for the Warwickshire service some additional analyses could be undertaken to explore the relationship between the referrals received and the maternity data. Figure 11.1 illustrates the IMD deprivation decile of smokers at booking (as derived from the maternity data set) compared to the deprivation decile corresponding to the referrals received by the specialist smoking service. Overall there was a strong match between the deciles of the smokers and the referrals providing a further indication that all smokers are being referred to the service.

Figure 11.1. IMD Deprivation Decile of Warwickshire Smokers and of the Referrals Received by the Specialist Service

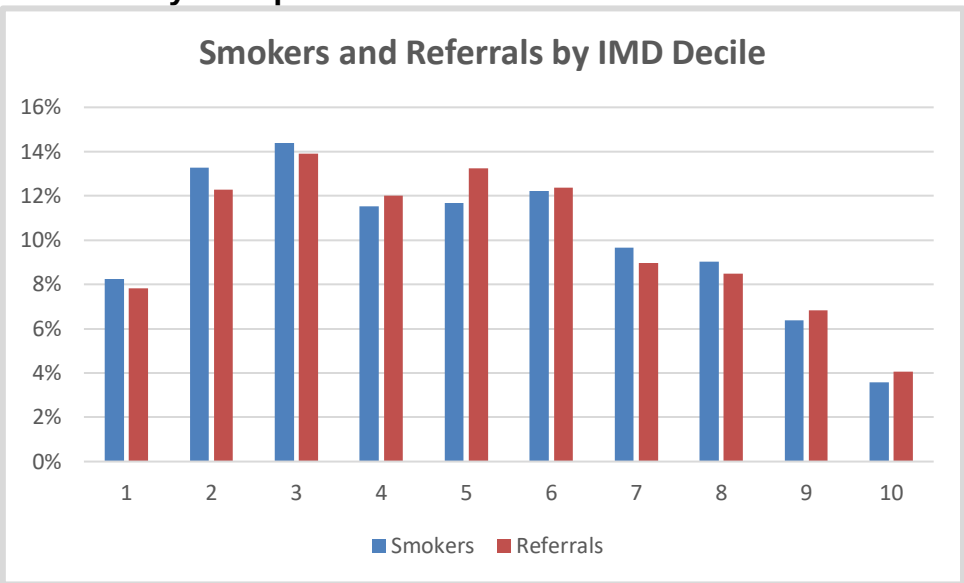
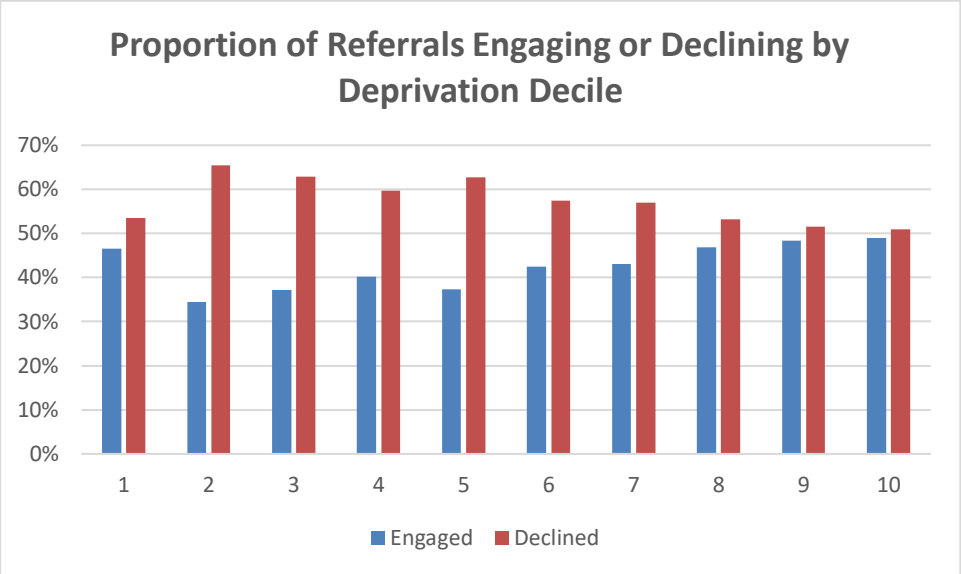


Figure 11.2 shows the smokers by deprivation decile by the proportion of the referrals that either engaged with or declined the offer of specialist cessation support. Overall of the 1841 referrals 759 (41%) engaged with the service and 1082 (59%) declined the offer of support. It can be seen in Figure 11.2 that the proportion engaging, or declining does vary by IMD decile.

Across deciles 2 to 7 there was a wider gap in terms of those declining the offer of support (the majority – ranging from 57% to 65% of the referrals received in those deciles) compared to the proportion engaging with the service (the minority ranging from 35% to 43% across deciles 2 to 7).

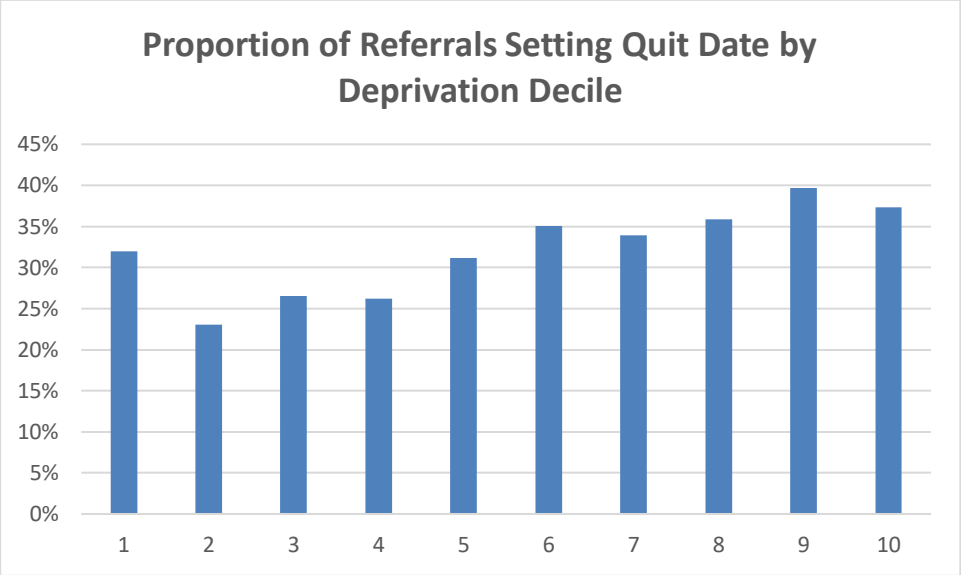
In deciles 1, 8, 9 and 10 whilst those that decline the offer of support remain the majority (51% to 53% of the referrals) the gap is narrower, with those engaging with the service ranging from 47% to 49% of those referred in those deciles.

Figure 11.2. The Proportion of Warwickshire Referrals that Engage or Decline Specialist Support by Deprivation Decile



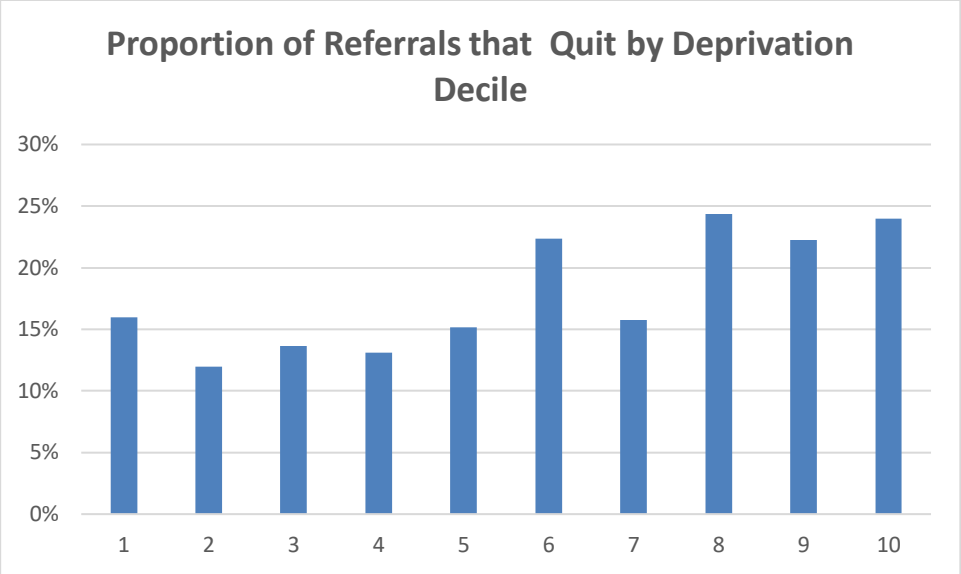
Overall 569 of the 1841 referrals (31%) set a quit date. Figure 11.3 shows that the proportion setting a quit date by deprivation decile ranges from a low of 23% of all referrals received for those living in deprivation decile 2 up to 40% of the referrals received from deprivation decile 9.

Figure 11.3. The Proportion of Warwickshire Referrals Setting a Quit Date by Deprivation Decile



Overall 17% (312 of the 1841 referrals) achieved a 4-week quit. Figure 11.4 illustrates that the proportion of referrals achieving a quit ranges from a low of 12% of the referrals received for those living in decile 2 up to 24% of those referred from deciles 8 and 10.

Figure 11.4. proportion of Referrals Quitting by Deprivation decile



11.5 Risk Perception Intervention

Impact of the Risk Perception Intervention (RPI)

The Risk Perception Intervention (RPI) was designed as part of the BabyClear programme and is intended as a 'hard hitting' intervention that enables the mother to more fully appreciate the risks to the fetus associated with smoking. It is designed to be delivered at the 12-week dating scan to women who have not engaged with the stop smoking service despite referral at booking. Following the scan the woman receives a personalised interview with an experienced midwife, using a computer programme with a visual display linked to a lifelike fetal doll (with umbilical cord, placenta and amniotic sac), to demonstrate the effects of smoking on the fetus. The women eligible for the RPI intervention are generally considered to be 'resistant smokers'.

This intervention has been offered in SWFT on an ad-hoc basis since 2017 but has been delivered more consistently since January 2018 and whilst it has not been possible to organise delivery of the RPI at the 12-week scan appointment, it has been delivered at the 16-week antenatal appointment.

In order to enable a fuller assessment of the impact of delivering the RPI in it's current form (ie not as part of the 12-week scan process, but at a later date) an additional data set was provided by the Warwickshire Specialist Stop Smoking Service. This included 3967 referrals made to the service between October 1st 2016 and January 10th 2020. Of these referrals 3156 were made by Warwickshire CMW and an additional 334 referrals were made following delivery of the RPI at SWFT.

Table 11.7. compares statistics relevant to these two cohorts of referrals. Of the number of referrals made similar proportions of women went on to access the service; 41% and 42% respectively. Of the number that accessed the service 72% of the CMW referral cohort went on to set a quit date as compared to 57% of the RPI cohort. The proportion of quitters was 37% of the number that accessed the service among the CMW referrals and 25% of the RPI cohort.

The proportion of 4-week quitters, as a percentage of those who set a quit date was 51% for the CMW cohort as compared to 44% of the RPI cohort.

Table 11.7. Referral and Take up of Smoking Cessation Support Following the Risk Perception Intervention

	All CMW Referrals			SW Risk Perception		
	Number	% of refs	% of access	Number	% of refs	% of access
Number referred	3156			334		
Number accessed	1298	41%		141	42%	
Number set quit date	931	29%	72%	80	24%	57%
Number quit	474	15%	37%	35	10%	25%
Quit as % QDS	51%			44%		

The RPI can be seen to make a small but important contribution to the overall number of quitters but its impact could be increased if delivery could be organised to coincide with the 12-week scan appointment where the visual display could strengthen the impact of the intervention.

Key Findings: Smoking Services

- **Whilst it cannot be confirmed there is evidence to indicate that a high proportion/all smokers identified at booking are being referred for specialist support. This is particularly true for 2018/19 indicating an improving picture. However, this may not be the case for Rugby smokers.**
- **There appears to be a high level of referrals from the GEH CMWs relative to the number of smokers at booking, potentially reflecting a high level of re-referral, and/or smokers being identified at a later point in the antenatal pathway**
- **Each year on average there are 686 referrals to the Coventry smoking service (this compares to an average of 645 smokers at booking) and 714 to the Warwickshire service (this compares to an average of 723 smokers at booking)**
- **The proportion of those who engage with smoking services ranges from 53% to 60% of Coventry referrals and from 40% to 42% of Warwickshire referrals**
- **The proportion of those engaging with services who go on to set a quit date are similar across the two services ranging from 67% to 82% for the Warwickshire service and 81% to 82% in Coventry**
- **The numbers who achieve a 4-week quit each year ranges from 117 to 124 in Warwickshire (16% to 17% of all referrals) and from 135 to 157 in Coventry (20% to 24% of all referrals). The average is 148 quitters per annum for Coventry and an average of 120 quitters each year for Warwickshire**
- **A high proportion of quitters are CO verified across both the Coventry and the Warwickshire services**

- **There is a longer average time to first appointment in Warwickshire (17 days) than in Coventry (11 days) and to 'quit date set' (23 days for Warwickshire service and 18 days for Coventry service)**
- **For Warwickshire there is evidence of variation in engagement with services by district and borough populations with just 25% of those referred from Nuneaton and Bedworth and from Rugby setting a quit date, as compared to 40% from Warwick**
- **Just 11% of those referred from North Warwickshire achieve a 4-week quit, compared to 23% of referrals from Stratford upon Avon**
- **The Coventry service tends to receive all referrals (99%) from midwives, whereas in Warwickshire 16% of referrals are from other professionals such as Health Visitors**
- **A high proportion of quitters are prescribed NRT – 93% in Warwickshire and 100% in Coventry**
- **Coventry clients have a higher average number of appointments – both for quitters (8 appointments) and non-quitters (3.3 appointments) than in Warwickshire (4.9 for quitters, 2.1 for non-quitters)**
- **The average cost per 4-week quitter ranges from £811 per quitter in the Coventry service to £1667 in the Warwickshire service**
- **For Warwickshire the deprivation profile of referrals for smoking cessation support matches the profile of smokers at booking**
- **There are differences in engagement and outcomes associated with the smoking service by deprivation decile with a tendency for better engagement and outcomes in less deprived deciles – but this is not a strictly linear relationship, with those in decile 1 'out-performing' those in deciles 2., 3 and 4.**
- **The RPI offered to 'resistant smokers' at SWFT makes a small but important contribution to smoking cessation**
- **The full value of the smoking services cannot be quantified in terms of the quitters achieved alone as the availability of the service is likely to encourage the delivery of VBA by midwives**

12 Findings: Case Note Audits

A key objective of the review was to assess compliance with NICE guidance (PH 26) by maternity, health visiting and FNP services. In order to assess compliance with the standards case note review proformas were developed as described below and staff from the respective services undertook the audits.

12.1 Maternity Case Note Audit

In addition to assessing compliance with NICE guidance the maternity case note proforma included the key requirements associated with delivering the SBLCB, as shown in appendix 13. One hundred women who were recorded as smokers at booking were identified from the electronic data provided by Trusts and the NHS Number for these individuals was provided back to Trusts together with an excel spreadsheet for completion. It is recognised that treatment and advice can be delivered by frontline staff but may not be documented, as such the audit findings may not wholly reflect the service being delivered.

Table 12.1 summarises the findings from the 3 Trusts in relation to the documentation of advice and provision of treatment as documented at booking for the cohort of smokers. It can be seen that documentation of CO measurement at booking ranged from 67% of records documenting the measurement at UHCW as compared to 85% of records at GEH and SWFT. The number of records with smoking advice documented ranged from 43% at GEH to 85% at SWFT. Likewise, documentation of referral to the specialist smoking service ranged from 61% at UHCW to 82% at SWFT.

The recording of the provision of written information to women was low at GEH (2% of records) and UHCW (12% of records), as compared to SWFT (82% of records). A small proportion of women were documented as using e-cigarettes at all Trusts.

Evidence of enquiry about partner/household smoking ranged from 65% of records at GEH to 83% at SWFT. Documentation of the sign-posting of partner/household members to smoking support was low at all Trusts ranging from 0% to 7% of records.

Table 12.1. Advice and Treatment for Smokers at Booking

Standard	UHCW	SWFT	GEH
Number of records audited	100	100	100
Number (%) with CO measurement	67%	85%	85%
Number (%) with smoking advice documented	64%	85%	43%
Number (%) with smoking referral documented	61%	82%	71%
Number (%) with written information given	12%	87%	2%
Number (%) documented as using e-cigarettes	5%	5%	3%
Number (%) enquiry about partner/household smoking	79%	83%	65%
Number (%) with signposting of partner/household to SSS	0%	7%	2%

Table 12.2 details the evidence retrieved from case notes in relation to smoking related documentation at subsequent appointments (ie any appointment, with any member of the maternity team after the booking appointment but before the 36-week appointment). This table includes information for the entire cohort for whom notes where available, whether they continued to be smokers or not. It can be seen that fewer records were available for assessment, presumably because some women experienced an early pregnancy loss, or transferred to an alternative provider for their maternity care for example.

Of the records that were assessed between 56% of records (UHCW) and 94% of records (SWFT) had smoking status documented at least once. For those for whom smoking status was recorded this varied from occurring on an average of 2.2 occasions at UHCW up to an average of 3.1 occasions at SWFT.

For 26% of UHCW records and 24% of GEH records smoking status was not documented between booking and the 36-week appointment.

In terms of repeat CO measurement, this was only recorded in 29% of UHCW's records, but in 64% of GEH and 94% of SWFT records.

There was a low level of recording of enquiry about partner/household smoking at UHCW (0%) and GEH (1%) as compared to the documentation evident in the SWFT records (58%) and low levels of documentation in relation to the sign-posting of partner/household members to smoking cessation support across all Trusts– 0% to 17% of records.

There was documentation concerning the use of e-cigarettes in 4% and 17% of the case note records.

The ordering of serial growth scans was not recorded at UHCW and no record of such scans being performed was evident. However, the records indicated that these scans had been undertaken for 85% of patients at GEH and 98% of smokers at SWFT..

For those having serial growth scans at SWFT women had on average 4.6 scans, whilst at GEH an average of 2.1 growth scans were provided.

Table 12.2. Documentation of Smoking Advice at Subsequent Appointments

Standard	UHCW	SWFT	GEH
Number of cases with subsequent appointments	76	94	96
Number with smoking status documented at least once	56 (74% - 56 of 76)	94 (100%)	80 (83% - 80 of 96)
For those documented - average number of times documented	2.2 (121 documents, 56 people)	3.1 (293 documents, 94 people)	2.0 (159 documents, 80 people)
Number (%) who have not had smoking status documented	20 (26%)	0	16 (17%)
Number with CO measurement	22 (29%)	88 (94%)	51 (53%)
Number (%) enquiry about partner/household smoking	0	55 (58%)	1 (1%)
Number (%) with signposting of partner/household to SSS	0	16 (17%)	1 (1%)
Number (%) with documented use of e-cigarettes	8 (10%)	16 (17%)	3 (3%)
Number (%) with serial growth scans	0	92 (98%)	82 (85%)
For serial growth scans – average number of scans provided (range)	n/a	4.6 (430 scans, of 94)	2.1 (201 scans of 96)

Table 12.3 summarises the audit findings relating to documentation at 36-weeks and at time of delivery. It can be seen that at UHCW of the 87 women who had information recorded at time of delivery, 73 (84%) had 36-week data recorded and 89 (95%) of deliveries at SWFT had 36-week data recorded. At GEH a higher number of women had 36-week data recorded (79) than information at time of delivery (57).

At UHCW 30% of the records had smoking status recorded at 36 weeks, as did 89% of records at SWFT and 34% at GEH. Of those with a smoking status recorded 82% at UHCW, 80% at SWFT and 74% at GEH had continued to smoke. At UHCW and GEH 60% of the

records included a 36-week CO measurement as did 72% of SWFT records. Of those with a CO measurement 34% at UHCW, 41% at SWFT and 42% at GEH had a CO value of >=4ppm.

The data indicates that 100% of the records included in the audit had a SATOD status at UHCW and SWFT, whilst 72% had a record at GEH. Of those with a SATOD status recorded 79% were smokers at time of delivery at UHCW, 80% at SWFT and 89% at GEH, indicating that a relatively small proportion of the original 100 smokers at booking had stopped smoking during pregnancy. However, as noted elsewhere in this report there are questions over the validity of SATOD in that in some instances the smoking status at booking is recorded 'by default' as the smoking status at delivery.

Table 12.3. Documentation and Data at 36-week Appointment and SATOD

Standard	UHCW	SWFT	GEH
Number delivering at the Trust	87	94	79 *
Number of records audited (all those that had a 36- week data)	73 (84%)	89 (95%)	79
Number (%) with smoking status recorded	22 (30% - 22 of 73)	79 (89% - 79 of 89)	27 (34% - 27 of 79)
Number (%) smoking at 36 weeks	18 (82% - 18 of 22)	63 (80% - 63 of 79)	20 (74% - 20 of 27)
Number (%) with 36-week CO measurement recorded	44 (60% - 44 of 73)	64 (72% - 64 of 89)	45 (60% - 45 of 79)
Number (%) with CO measurement >=4ppm	15 (34% 15 of 44)	26 (41% 26 of 64)	19 (42% 19 of 45)
Number (%) with SATOD status documented	87 (100%)	94 (100%)	57 (72% -57 of 79)
Number (%) smokers at time of delivery	69 (79% - 69 of 87)	75 (80% - 75 of 94)	51 (89%- 51 of 57)

*Only 57 had SATOD data but assume more women did deliver at the Trust as indicated by number having 36-week assessment

Key Findings: Maternity case note audit

- **At booking, between 67% (UHCW) to 85% (SWFT and GEH) had a documented CO measurement**
- **Smoking advice at booking was documented for between 43% of smokers at GEH up to 85% at SWFT and between 61% at UHCW. At SWFT, 82% had smoking referral documented**
- **There is a low level of documentation regarding the provision of written information at GEH (2%) and UHCW (12%) as compared to SWFT (87%)**
- **There is a relatively high level of documentation at booking in relation to partner smoking, ranging from 65% at GEH to 83% at SWFT, but there are low levels of signposting of partners to smoking cessation support**
- **At subsequent appointments, smoking status was documented on at least one more occasion (prior to 36-weeks) for 74% of records at UHCW through to 100% of records at SWFT, and it was documented on average between 2 to 3.1 occasions across the Trusts**
- **The proportion of smokers at booking who had a repeat CO measurement (prior to 36 weeks) ranged from 29% of women at UHCW to 94% at SWFT**
- **Outside of SWFT, at subsequent appointments there was little if any enquiry about household smokers, or signposting to support for household members who smoke**
- **Between 3% and 17% of the smokers at booking were documented as using an e-cigarette at some point in their antenatal pathway**
- **Serial growth scans were provided to a high proportion of smokers at booking at GEH (85%) and at SWFT (98%), whilst none were recorded for the women audited at UHCW**
- **On average, 4.6 growth scans were provided per woman at SWFT and 2.1 per woman at GEH**
- **In terms of 36-week data, between 84% at UHCW and 95% of women at SWFT had 36-week data recorded**
- **At UHCW, 30% of the records had a 36-week smoking status recorded – as did 89% at SWFT and 34% at GEH**
- **Of those with a smoking status - between 74% at GEH and 82% at UHCW were recorded as smokers**
- **Between 60% of records at GEH and UHCW and 72% of the records at SWFT had a CO measurement at 36-weeks. Of these, the range was between 34% at UHCW and 42% at GEH having a value >=4ppm**

12.2 Health Visitor Case Note Audit

Clearly compliance with NICE guidance (PH26) is relevant to Health Visitors but the service also plays a key role in leading implementation of the Healthy Child Programme (HCP). The HCP is aimed at providing the best foundations for child development; preventing poor health and promoting healthy behaviours among families. As such tackling smoking in pregnancy and reducing exposure to second-hand smoke are central objectives of the programme. Universal health checks provide an important opportunity for Health Visitors to address issues related to smoking in pregnancy and household smoking and in this context a case note review proforma was developed in agreement with service managers, as summarised in appendix 14.

Personal identifiers for the 300 women who were included in the maternity case note audit were provided to the Health Visiting services together with an excel spreadsheet for completion. Each service determined the best way of completing the audit and as such arrangements will have varied depending on the resources available within each area.

It can be seen from Table 12.4 that overall Health Visiting data was available for 281 of the 300 smokers at booking included in the audit. The Coventry service had a total of 85 records, North Warwickshire had 78, South Warwickshire 94 and Rugby 24. Table 12.4 outlines information about smoking in pregnancy as documented through antenatal assessment visits. These visits can only take place when Health Visiting services have received birth notifications from midwives, where the services have the capacity to undertake the visits and where women agree to an appointment. It can be seen that the number of women for whom a notification had been received by the Health Visiting service ranged from 20% of the records in Coventry to 70% in South Warwickshire (NB. Those undertaking the audit in Coventry later reported that additional notifications had been received, but that these had not been entered onto the system at the time the audit was undertaken)

Table 12.4 shows that the proportion of notifications that contained information about the woman's smoking status ranged from 6% of those received by the Coventry service up to 62% of those received by the South Warwickshire service. None of the notifications that were received carried any information concerning any smoking related referrals that might have been made by midwifery services.

Where notifications were received it was not always possible to offer a visit: in Coventry a visit was offered for 12 of the 17 (71%) of the notifications received but visits were only actually received by 7 women (42% of the notifications). In North Warwickshire visits were offered in response to all of the 46 notifications received but could only be delivered for 24 (52%) of the total. In South Warwickshire 64 of the 66 notifications (97%) were offered an appointment and 51 (77%) went on to receive a visit. In Rugby 9 of the 12 notifications (75%) were offered a visit and 7 (58%) of the women with notifications received a visit.

Table 12.4. Health Visitor Notifications Received and Details of Antenatal Appointments

Data item/characteristic	Coventry	North Warwickshire	South Warwickshire	Rugby
Total records for which data was available	85	78	94	24
Notification received (%) of records with data	17* (20%)	46 (59%)	66 (70%)	12 (50%)
Number (%) of notifications including smoking status	1 (6% of notifications received)	10 (22% of notifications received)	41 (62% of notifications received)	1 (8% of notifications received)
Number (%) of notifications with previous smoking referral information	Unknown	Unknown	Unknown	Unknown
Number (%) notifications antenatal appointment offered	12 (71% of notifications received)	46 (100% of notifications received)	64 (97% of notifications received)	9 (75% of notifications received)
Number (%) notifications antenatal appointment received	7 (42% of notifications received)	24 (52% of notifications received)	51 (77% of notifications received)	7 (58% of notifications received)

***incomplete data – more notifications received than were counted**

Table 12.5 includes details that were documented in relation to smoking where antenatal visits were undertaken. Smoking status was recorded for 71% of the visits in Coventry, 92% in North Warwickshire, 98% in South Warwickshire and for 100% of the visits made in Rugby.

Of those with a smoking status recorded 40% were recorded as still smoking in Coventry, 41% were still smoking in North Warwickshire, 64% were still smoking in South Warwickshire, and 14% were recorded as still being smokers in Rugby.

Between 72% and 100% of records included evidence that smoking advice was documented. Whilst there was no documented referrals to smoking services in Rugby, 1 of the 2 smokers in Coventry had evidence of referral, 2 of 9 (22%) in North Warwickshire and 18 of 32 (56%) smokers in South Warwickshire.

It was documented that written information was given to 9 of the collective 44 smokers with the highest proportion (33% of smokers) in North Warwickshire having this documented.

Table 12.5. Smoking Related Details Recorded Where an Antenatal Appointment was Received

Data item/characteristic	Coventry	North Warwickshire	South Warwickshire	Rugby
Total records included in the audit with AN appointment received	7	24	51	7
Number (%) smoking status of the woman recorded	5 (71%)	22 (92%)	50 (98%)	7 (100%)
Number (%) smoking	2 (40% of 5 with smoking status)	9 (41% of 22 with smoking status)	32 (64% of 50 with smoking status)	1 (14% of 7 with smoking status)
For those continuing to smoke - Smoking advice documented	2 (100% of 2 smokers)	8 (89% of 9 smokers)	23 (72% of 32 smokers)	1 (100% of 1 smoker)
For those continuing to smoke - Smoking referral documented	1 (50% of 2 smokers)	2 (22% of 9 smokers)	18 (56% of 32 smokers)	0
For those continuing to smoke - documented that written info given	0	3 (33% of 9 smokers)	5 (16% of 32 smokers)	1 (100% of 1 smoker)

Table 12.6 includes details of documentation relating to enquiries about household smoking and the provision of advice at antenatal visits. It shows that for 86% of the visits in Coventry, 63% in North Warwickshire, 65% in South Warwickshire and 29% in Rugby there was documented evidence of enquiry about household smoking. For a small number of records there was documentation of sign-posting to smoking cessation services for other household smokers (the number of other household smokers was not requested).

Whilst there was not any recording of provision of advice relating to the dangers of second-hand smoke for the antenatal visits in Coventry or Rugby, this was documented for 25% of the visits in South Warwickshire and 63% of the visits in North Warwickshire.

Table 12.6. Documentation of Household Smoking at Antenatal Visits

Data item/characteristic	Coventry	North Warwickshire	South Warwickshire	Rugby
Total records included in the audit with AN appointment received	7	24	51	7
Number (%) of records with documented evidence of enquiry about partner/household smoking	6 (86%)	15 (63%)	33 (65%)	2 (29%)
Number (%) of records signposted to SSS for partner/household members	2 (29%)	2 (8%)	7 (14%)	0
Number (%) of records dangers of secondary smoke advice documented	0	15 (63%)	13 (25%)	0

Table 12.7 includes details that were documented in relation to smoking at the New Birth Visit. It can be seen that smoking status was documented for between 41% (South Warwickshire) and 84% (North Warwickshire) visits. Of those with a recorded smoking status between 12% (Rugby) and 100% (Coventry) were documented as smokers. Of the post-natal smokers between 10% and 23% had been identified as quitters in the maternity records (ie these women have relapsed to smoking having quit during pregnancy).

For those continuing to smoke, smoking advice was documented for between 38% (South Warwickshire) and 100% (Rugby) of the smokers. For a number of the smokers referral to smoking services was documented (27 – 44% of the Coventry smokers, 3 – 8% of North Warwickshire smokers and 3 – 10% of South Warwickshire smokers). There was documentation of written information being provided to smokers for a total of 6 smokers across all of the services.

Table 12.7. Documentation Relating to Smoking at the New Birth Visit

Data item/characteristic	Coventry	North Warwickshire	South Warwickshire	Rugby
Total records included in the audit with NBV	85	76	94	24
Number (%) smoking status of the woman recorded	61 (72%)	64 (84%)	39 (41%)	16 (67%)
Number (%) smoking	61 (100% of those with status recorded)	36 (56% of those with status recorded)	29 (74% of those with status recorded)	2 (12% of those with status recorded)
Of number smoking, what number (%) had been quitters (as documented in maternity data)	14 (23% of 61 smokers)	6 (17% of 36 smokers)	3 (10% of 29 smokers)	0
For all those continuing to smoke – Number (%) with smoking advice documented	32 (52% of 61 smokers)	28 (78% of 36 smokers)	11 (38% of 29 smokers)	2 (100% of 2 smokers)
For those continuing to smoke - Number (%) smoking referral documented	27 (44% of 61 smokers)	3 (8% of 36 smokers)	3 (10% of 29 smokers)	0
For those continuing to smoke - Number (%) with documented written info given	0	4 (11% of 36 smokers)	1 (3% of 29 smokers)	1 (50% of 2 smokers)

Table 12.8 includes details of documentation relating to enquiries about household smoking and the provision of advice at 14-day post-natal visits. It shows that for 39% of the visits in Coventry, 42% in North Warwickshire, 18% in South Warwickshire and 63% in Rugby there was documented evidence of enquiry about household smoking. For a small number of records, a total of 13 across all services there was documentation of sign-posting to smoking cessation services for other household smokers (the number of other household smokers was not requested).

There were generally low levels of recording of the provision of advice relating to the dangers of second-hand smoke; this was documented for 5% of visits in Coventry, 49% in North Warwickshire 9% in South Warwickshire and 38% of the visits in Rugby.

Table 12.8. Documentation of Household Smoking at New Birth Visit

Data item/characteristic	Coventry	North Warwickshire	South Warwickshire	Rugby
Total records included in the audit with NBV	85	76	94	24
Number (%) of records with documented evidence of enquiry about partner/household smoking	33 (39%)	32 (42%)	17 (18%)	15 (63%)
Number (%) of records signposted to SSS for partner/household members	3 (3.5%)	6 (8%)	4 (4%)	0
Number (%) of records dangers of secondary smoke advice documented	4 (5%)	37 (49%)	8 (9%)	9 (38%)

Table 12.9 includes details that were documented in relation to smoking at the 6-8-week review. It appears that data completion for this section of the audit was incomplete in Rugby and South Warwickshire and as such no observations are made in relation to these services.

For the Coventry service it can be seen that smoking status was documented for 60% of the visits and in North Warwickshire for 34% of visits. Of those with a recorded smoking status between 90% in Coventry and 48% in North Warwickshire were documented as smokers. Of these smokers between 8% and 24% had been identified as quitters in the maternity records.

For those continuing to smoke, smoking advice was documented in between 50%and 62% of the records. (South Warwickshire) and 100% (Rugby) of the smokers. For a number of the smokers referral to smoking services was documented – a total of 18 smokers across the 2 services but documentation of written information being provided was only evident on one occasion.

Table 12.9. Documentation Relating to Smoking at 6-8-week Review

Data item/characteristic	Coventry	North Warwickshire	South Warwickshire	Rugby
Total records included in the audit with 6-8-week review	85	80	94	24
Number (%) smoking status of the woman recorded	51 (60%)	27 (34%)	5 (5%)	3 (13%)
Number (%) smoking	46 (90% of 51 with recorded status)	13 (48% of 27 with recorded status)	5 (100% of 5 with recorded status)	0
Of number smoking, what number (%) had been quitters (as documented in maternity data)	11 (24% of 46 smokers)	1 (8% of 13 smokers)	1 (20% of 5 smokers)	0
For all those continuing to smoke – Number (%) with smoking advice documented	23 (50% of 46 smokers)	8 (62% of 13 smokers)	1 (20% of 5 smokers)	0
For those continuing to smoke - Number (%) smoking referral documented	17 (37% of 46 smokers)	1 (8% of 13 smokers)	1 (20% of 5 smokers)	0
For those continuing to smoke - Number (%) with documented written info given	0	1 (8% of 13 smokers)	0	0

It appears that there was a low level of completion of the audit in relation to the documentation of household smoking at the 6-8 week visit as shown in Table 12.10. As such no comment is made here in relation to this.

Table 12.10. Documentation of Household Smoking at 6-8-week Review

Data item/characteristic	Coventry	North Warwickshire	South Warwickshire	Rugby
Total records included in the audit with 6-8-week review	85	76	94	24
Number (%) of records with documented evidence of enquiry about partner/household smoking	14 (16%)	14 (18%)	0	2 (8%)
Number (%) of records signposted to SSS for partner/household members	2 (2%)	0	0	0
Number (%) of records dangers of secondary smoke advice documented	3 (4%)	11 (14%)	0	0

Whilst the 6-8-week aspect of this audit was generally not well completed there is an indication that levels of recording of smoking status and action in response to this is more evident in the antenatal visits than in later visits, and likewise documentation of enquiry and action in relation to household smoking tends to diminish over time.

Information about any documented discussion about relapse prevention was also sought through this audit but almost universally there was no documentation in relation to this. Clearly the lack of documentation could reflect the fact that such conversations are not taking place, or it could be that they are occurring, but just are not being documented. Likewise, there was very little reference to the use of e-cigarettes either among those who were smoking, or those who had quit.

Key Findings: Health Visitor case note audit

- **There is an apparent variation in the proportion of birth notifications being received by Health Visiting services and generally low levels of information about smoking status included with the notifications received with none including any information about prior referrals to smoking services made by midwifery services**
- **A high proportion of antenatal visits were offered where notifications had been received, but a lower proportion (42% to 77%) actually received a visit.**
- **Recording of smoking status at antenatal visits was generally high (71% to 100% of visits) and a high proportion (72% to 100%) had advice documented**
- **The recorded evidence indicates generally low levels of referral by Health Visitors to smoking services for pregnant smokers (with the exception of South Warwickshire – 56%) and low levels of documentation relating to the provision of written information**
- **There was documentation of enquiry about household smoking in a substantial proportion of the antenatal visits (63% to 86%, with the exception of Rugby records (29%)) but low levels of evidence of sign-posting to smoking cessation support for household smokers**
- **There were generally high levels of documentation of smoking status at the New Birth Visit (41% to 84%) as opposed to at the 6-8-week review (34% to 60% for the services providing 6-8-week information)**
- **Between 10% to 23% of the smokers at the NBV and 8% to 24% of the 6-8-week smokers had been recorded as 'quitters' in the maternity data set (ie these women had relapsed)**
- **A higher proportion of women at the NBV (38% to 100%) than at the 6-8-week review (20% to 50%) had smoking advice documented**
- **With the exception of Coventry there were generally low levels of referrals to smoking service's documented at either the NBV or the 6-8-week review, and also generally low levels of documentation that written information had been given.**
- **There is moderate evidence of enquiry about household smoking at the NBV (18% to 63% of records) but less so at the 6-8-week review (8 to 18% of records)**
- **There was no evidence of documented discussions about relapse prevention for the women who had quit smoking during pregnancy and a number of the women who had quit were documented as post-natal smokers.**

12.3 FNP Case Note Audit

Compliance with NICE guidance (PH26) is relevant to all clinicians and services who have a role in supporting pregnant women. Thus, in order to assess compliance of FNP services with relevant a case note review proforma was developed as summarised in appendix 15. The Coventry and the Warwickshire FNP services were each asked to complete the audit on a series of 50 consecutive records.

Table 12.11 provides details of the case note audit for 100 FNP clients (50 from Coventry, 28 from North Warwickshire and 22 from South Warwickshire). Table 12.11 shows that the Coventry population is more ethnically diverse, and the Coventry and North Warwickshire populations have similar levels of deprivation – with 42% and 46% of the clients being from the most deprived deciles.

The North Warwickshire cases had a lower proportion of records (75%) with smoking status documented. Of the records with smoking status documented the proportion of smokers at first FNP assessment ranged from 33% in North Warwickshire to 45% in South Warwickshire. A higher proportion of clients were identified as ‘ever smokers’ in Coventry (54%) and South Warwickshire (68%).

When looking at the characteristics of the smokers in isolation, whilst the numbers are small, it is interesting to note that a smaller proportion of the clients who smoke in North Warwickshire are from the more deprived deciles (28% in the smokers vs 46% of the total cases).

Table 12.11. Characteristics of FNP Populations at First Assessment

	Total FNP population			Smokers among the FNP population		
Data item/characteristic	**Coventry**	**North Warwickshire**	**South Warwickshire /Rugby**	**Coventry**	**North Warwickshire**	**South Warwickshire /Rugby**
Total records included in the audit	50	28	22	18 (36%)	7 (25%)	10 (45%)
Number (%) from BME groups	8 (16%)	1 (3.6%)	1 (4.5%)	2 (11%)	1 (14%)	0
Number (%) deprivation decile 1	11 (22%)	7 (25%)	0	3 (17%)	1 (14%)	0
Number (%) deprivation decile 2	10 (20%)	6 (21%)	0	4 (22%)	1 (14%)	0
Number (%) of total with smoking status of the client recorded	50 (100%)	21 (75%)	22 (100%)	(100%)	(100%)	(100%)
Number (%) of total smoking at FNP assessment	18 (36%)	7 (33%) (of those with recorded status)	10 (45%)	(100%)	(100%)	(100%)
Number (%) of total non-smokers	32 (64%)	14 (67%) (of those with recorded status)	12 (55%)	(0%)	(0%)	(0%)
Number (%) of total recorded as 'ever smoker'	27 (54%)	7 (33%) (of those with recorded status)	15 (68%)	(100%)	(100%)	(100%)

Table 12.12 includes details of the documented advice given to smokers at their first FNP assessment. This shows that a high proportion of cases in both Coventry and South Warwickshire have smoking advice and referrals documented at the first FNP assessment, whilst this is not the case for the North Warwickshire population.

Table 12.12. Details of Smokers Among FNP Populations at First Assessment

	Coventry	North Warwickshire	South Warwickshire /Rugby
Total number of smokers at FNP assessment (- taken from table above)	18	7	10
Number (%) - Smoking advice documented	18 (100%)	1 (14%)	10 (100%)
Number (%) - Smoking referral documented	18 (100%)	0	7 (70%)
Number (%) - documented that written info given	17 (94%)	0	10 (100%)
Number (%) - documented as using e-cigarette as well as smoking	0	0	1 (10%)

Table 12.13 details documentation associated with assessment at 36-weeks and it shows that 18 (64%) of clients had a documented 36-week assessment among the North Warwickshire cohort, whilst for the other services 100% of clients had an assessment.

Among the Coventry population there was the same number of smokers smoking at smoking at 36-weeks as there had been at the first assessment, whilst for the South Warwickshire population there were five less smokers at 36-weeks (ie 5 identified as ‘quitters’). One of the 7 North Warwickshire smokers at initial assessment was documented as having quit (14%), but incomplete data makes full interpretation of changes difficult.

Of those still smoking at 36 weeks advice was documented for 83% to 100% of the clients in Coventry and South Warwickshire but lower levels of referrals were made (17% in Coventry, 40% in South Warwickshire). There was a low level of documentation or use of e-cigarettes – 2 among smokers in South Warwickshire and 1 in a non-smoker in Coventry

Table 12.13. Details of all FNP Records at 36 weeks (Smokers and Non-smokers)

	Coventry	North Warwickshire	South Warwickshire /Rugby
Total number of records in audit sample (as per first FNP table)	50	28	22
Total number of records with 36-week assessment	50 (100%)	18 (64%)	22 (100%)
Total number smoking at 36-week assessment	18 (36%)	2 (11%)	5 (22%)
Number who have quit since FNP assessment (were smokers at first assessment but not at 36 weeks)	0	1 (incomplete data)	5
Number (%) of smokers at 36 weeks - Smoking advice documented	15 (83%)	0	5 (100%)
Number (%) of smokers at 36 weeks -- Smoking referral documented	3 (17%)	0	2 (40%)
Number (%) of smokers at 36 weeks -documented that written info given	17 (94%)	0	3 (60%)
Number (%) of smokers at 36 weeks -- documented as using e-cigarette as well as smoking	0	0	2 (40%)
Number (%) of non-smokers at 36 weeks -- documented as using e-cigarette	3% (1 out of 32)	0%	0%

Table 12.14 details assessments undertaken at 6 weeks and at the one-year post-natal check. It can be seen that with the exception of South Warwickshire there is a generally lower level of smoking documentation. From the data provided there appear to be less smokers among the Coventry population (15) than at the 36-week assessment (18). For the South Warwickshire population the number of smokers increased from 5 at 36 weeks to 11 at the 6 week assessment and still further to 12 at the one-year point. For Coventry the number of smokers remained constant whilst incomplete data makes interpretation for North Warwickshire difficult.

There is a high level of advice documented but a low level of referrals being made to smoking services, and varying levels of documentation of information given (47% to 100%). Only one client in the Coventry service was documented as using an e-cigarette (not shown in the table). Just 4 of all the FNP clients included in the audit were breast-feeding at 6-8 weeks.

Table 12.14. FNP Case Note Audit Data – 6 weeks and One Year Post-Natal for Smokers

	6-week assessment			One-year post-natal assessment		
Data item/characteristic	**Coventry**	**North Warwickshire**	**South Warwickshire/ Rugby**	**Coventry**	**North Warwickshire**	**South Warwickshire/ Rugby**
Total records included in the audit with 6-week data /One year recorded	50	18	22	50	18	22
Number (%) smoking status of the woman recorded	48 (96%)	6 (33%)	22 (100%)	33 (66%)	5 (28%)	22 (100%)
Number (%) smoking	15 (31%	2 (33%)	11 (50%)	15 (45%)	1 (20%)	12 (55%)
For all those continuing to smoke – Number (%) with smoking advice documented	100%	0	100%	14 (93%)	0	100%
For those continuing to smoke - Number (%) smoking referral documented	2 (13%)	0	2 (18%)	1 (7%)	0	1 (8%)
For those continuing to smoke - Number (%) with documented written info given	13 (87%)	0	9 (82%)	7 (47%)	0	100%
For those continuing to smoke number (%) breastfeeding (total or partial)	4 (27%)	0	0	0	0	0

Table 12.15 shows that a small proportion of the non-smokers had previously been smokers at first assessment but there is very low levels of documentation around relapse prevention. None of the non-smokers were documented as using e-cigarettes and none were breast feeding (not shown in table)

Table 12.15. FNP Case Note Audit Data – 6 weeks and One Year Post-Natal for Non- Smokers

	6-week assessment			One-year post-natal assessment		
Data item/characteristic	**Coventry**	**North Warwickshire**	**South Warwickshire/ Rugby**	**Coventry**	**North Warwickshire**	**South Warwickshire/ Rugby**
Total records included in the audit with 6-week data /One year recorded	50	18	22	50	18	22
Number (%) smoking status of the woman recorded	48 (96%)	6 (67%)	22 (100%)	33 (66%)	5 (28%)	22 (100%)
Number (%) not smoking	33 (69%)	4 (22%)	11 (50%)	18 (54%)	4 (80%)	10 (45%)
Of those not smoking – what number % were smokers at FNP assessment (ie quitters)	4 (12%)	1 (25%)	2 (18%)	1 (5%)	1 (25%)	1 (10%)
For those who have remained as quitters - Number (%) with documentation of 'relapse prevention' discussion	1 (25%)	0	1 (9%)	0	0	0

Table 12.16 shows details for the assessment of all clients – smokers and non-smokers. There was no information provided from Warwickshire North for these data items. Records for Coventry and South Warwickshire indicate that there is a relatively high proportion of records with evidence of enquiry about partner/household smoking but very low levels of signposting of household members to smoking cessation support. Recording of the dangers of second-hand smoke ranged from 32% to 100% of records, with a lower proportion in Coventry at one year (32%) than at 6 weeks (78%).

Table 12.16. FNP Case Note Audit Data – 6 weeks and One Year Post-Natal for all Records

	6-week assessment			One-year post-natal assessment		
Data item/characteristic	**Coventry**	**North Warwickshire**	**South Warwickshire/ Rugby**	**Coventry**	**North Warwickshire**	**South Warwickshire/ Rugby**
Total records included in the audit with 6-week data /One year recorded	50	18	22	50	18	22
Number (%) of records with documented evidence of enquiry about partner/household smoking	41 (82%)	0	22 (100%)	49 (98%)	0	22 (100%)
Number (%) of records signposted to SSS for partner/household members	0 (0%)	0	0	1 (2%)	0	0
Number (%) of records dangers of secondary smoke advice documented	39 (78%)	0	22 (100%)	16 (32%)	0	22 (100%)

Summary of Individual Smoking Patterns
Of the 18 smokers identified by the Coventry service 14 continued to smoke throughout their FNP journey. Of the other four smokers the following applied:

- Quit by 6-weeks post-natal, but had restarted by restarted by one year
- Quit by 6 weeks post – but restarted by one year
- Quit by 6 weeks post and remained quit
- Quit by 36 weeks – but restarted by one year

Therefore only one of the 18 smokers at first assessment quit at some point within the FNP pathway without re-starting

Of the 32 non-smokers at first assessment – one became a smoker by 36 weeks, one became a smoker by 6 weeks and three became a smoker by one year (ie 5 of 32 (16%) became smokers – most likely had been smokers prior to first FNP assessment)

Of the 10 smokers identified at first assessment in the South Warwickshire service:

- 5 smoked throughout their FNP pathway
- 5 had quit by 36 weeks.
- Of the 5 who had quit at 36 weeks 4 of them had re-started by 6 weeks post-natal and only one remained quit.

Of the 12 non-smokers at first assessment – 3 had become smokers by 6 weeks post-natal and one had become a smoker by one-year post-natal. Therefore 4 of the 12 non-smokers (33%) had become smokers.

Key Findings: FNP case note audit

- **There is apparent variability in the level of recording of smoking related issues across services with less recording undertaken within the North Warwickshire service (NB. This may be a consequence of the way the audit was undertaken TBC)**
- **Between 33% and 45% of the FNP population are identified as smokers at first assessment, and up to 68% were recorded as 'ever smokers'**
- **Smoking status is documented for between 75% to 100% of clients at first FNP assessment**
- **Among smokers, with the exception of North Warwickshire, there was a high level of smoking advice documented at first assessments, and a high percentage of clients given information and referrals made to specialist support**
- **There were generally low levels of referral to specialist support beyond the first assessment, although it was documented that advice was given.**
- **There were generally low levels of signposting of partners to stop smoking support**
- **In South Warwickshire a significant proportion of the smokers at first assessment were noted to have quit by the 36-week assessment (50%)**
- **Seven of the 9 smokers who quit following the first FNP assessment had re-started smoking during the post-natal period (78%)**
- **Just one of the 10 South Warwickshire smokers at first assessment (10%) and one of the 18 Coventry smokers (5%) quit and remained quit**
- **Nine of the collective 44 non-smokers at first assessment (20%) from the Coventry and South Warwickshire services had become smokers by one-year post-natal (most likely to be those recorded as previous smokers at first assessment)**
- **There is little evidence of a focus on relapse prevention with 2 documented conversations.**
- **There appears to be a good deal of positive practice providing a platform for future enhanced prevention of smoking related harm**

13 Findings: Staff Engagement

Understanding the views of staff in relation to current practice is critical to identifying the opportunities for improvement in relation to smoking in pregnancy. This review benefitted from good engagement with services and staff through the work of the Task and Finish Group. Through the group, staff surveys were agreed for use among staff in the following services:

- Maternity services
- Health Visitor and FNP services
- GP practice services
- Children's Centre/Family hubs

Key themes that were explored through the surveys included:

- The relative importance of smoking in pregnancy to staff roles
- The adequacy of training
- Current practice in relation to guidance
- Barriers in delivering stop smoking advice
  Opportunities for improvement

13.1 Surveys and Discussion Groups

The surveys were made available electronically and were also completed in hard copy where it was more convenient for staff to do so. The survey questions are enclosed as appendix 16 (maternity survey), appendix 17 (Health Visitor/FNP survey), appendix 18 (GP practice survey), appendix 19 (Children's Centre/Family hub survey),

In addition to the surveys, staff engagement discussions were held with small groups of staff in clinical settings to explore staff perspectives more fully.

Responses to Surveys and Numbers Engaged in Discussions

Table 13.1 provides an overview of the survey responses by service and by geographical area. There was a total of 580 survey responses with a good level of response from all of the services engaged in undertaking the surveys and across all geographical areas.

Table 13.1. Summary of survey responses

	Total	Area:			
		Coventry	Rugby	South Warwickshire	North Warwickshire
Maternity Services	268	157 (58%)		66 (25%)	45 (17%)
GP Practices	136	69 (53%)		43 (33%)	19 (14%)
Health Visiting/FNP Services	119	46 (39%)	25 (21%)	36 (31%)	11 (9%)
Children and Family Centres	57	30 (53%)	-	27 (47%)	

Response groups for maternity service included the following:

Maternity Service by Usual Area of Work: Community: those working in the community only; antenatal: those working in antenatal assessment unit, antenatal clinic, antenatal ward, foetal medicine, ultrasound; postnatal/other: those working on labour ward, postnatal ward or other.

Maternity Service by Profession: Midwives: midwives and student midwives; support workers: clinical/maternity support worker, administrators, research admin, HCA, other; Other medical professionals: Obstetricians, paediatricians, medical students, doctors, neonatal nurses, other.

Table 13.2 provides an overview of the staff who were engaged in discussion groups exploring issues in relation to smoking in pregnancy in more detail. There was a total of 228 staff involved in these face to face discussions and again it can be seen that staff in all Trusts and from a range of different disciplines were involved.

Table 13.2. Summary of Discussion Group Engagement

	Total (n=228)	**Trust:**		
		SWFT	**UHCW**	**GEH**
Midwives	96	19 (20%)	49 (51%)	28 29%)
Health Visiting Staff	72	72 (100%)	-	-
Junior Doctors	22	0	10 (45%)	12 (55%)
Family Nurse Practitioners (FNPs)	13	13 (100%)	-	-
Managers	16	-		
Stop Smoking in Pregnancy service advisors (SSiP service)	9	9 (100%)	-	-

Importance of Delivering Advice to Pregnant Women About Smoking
For maternity service staff, delivering advice about smoking to pregnant women was seen to be very important by the majority of staff (70% across the survey) as shown in Figure 13.1. However, 58% of sonographers stated that this was not important in their role, while 13% of antenatal staff felt that it was not important to their role. Eighty-five percent of community midwives said it was very important.

Across the GP practice survey, 85% of staff reported discussing smoking with pregnant women as very important, with a consistent response across all areas and professions (range 84-89%). Whilst 73% of all staff answering the health visiting service survey stating that discussion of smoking with pregnant women was very important to their role, this was lower for community and nursery nurses; 58% said this was very important in their role while 11% said this was not important in their role.

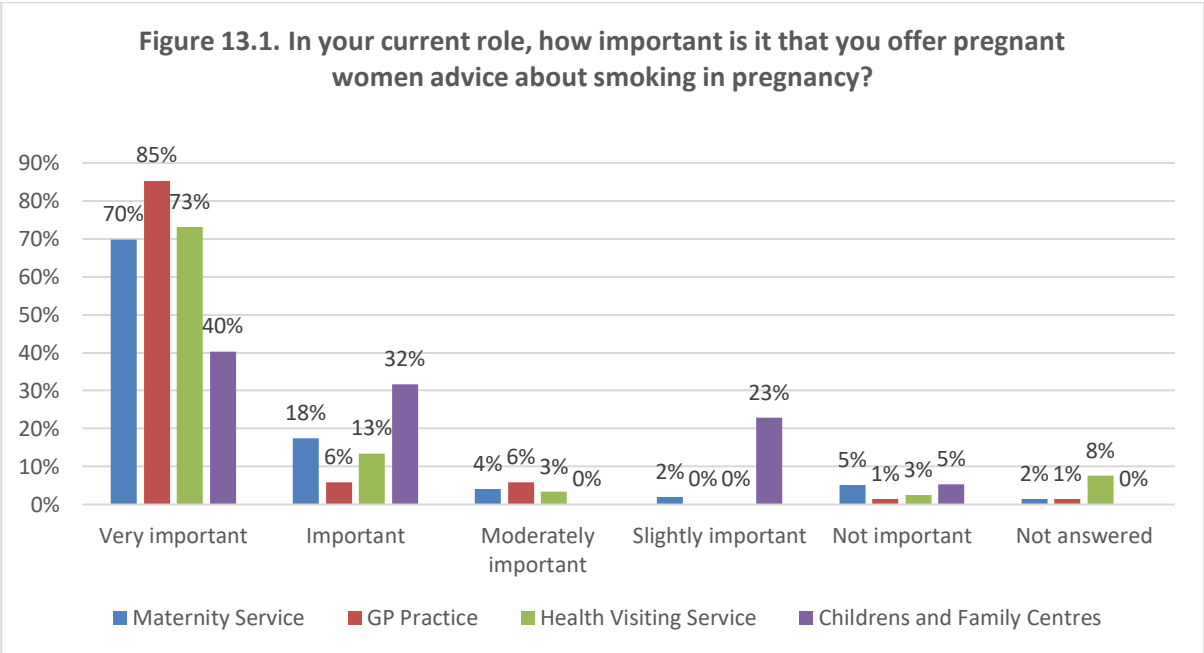
Less importance was given to this topic in the children and family centre survey, with 40% stating this was very important while 5% said it was not important and 23% said it was slightly important. Family hub and early years workers saw this issue as less important,

with 36% answering that it was very important, 25% slightly important and 3% not important.

Health Visiting/FNP staff were asked how important it was in their role to offer postnatal advice to women who had quit smoking in pregnancy and 60% said this was very important. This was higher across South Warwickshire staff at 72% and for family nurses (75%).

It was reported that relapse prevention advice was always given by 33% of Health Visitor service staff and not always given by 33%. Coventry and North Warwickshire reported giving advice slightly more often with 46% and 45% respectively saying they always provided this advice. Reasons for not giving this advice included it not always being appropriate, dependence on individual needs, time constraints and it not being part of their job role.

The majority of Health Visitor service staff felt that it was very important to their role to offer postnatal advice to women and their partners who continued to smoke postnatally and to give advice about secondary exposure, with 75% and 82% respectively stating this was very important.



Training

Recent training

Across the maternity services, 34% in total had been trained to deliver smoking in pregnancy advice in the last year whilst 25% reported that they had never been trained, as shown in Figure 13.2. Fifty-seven percent of community midwives reported receiving training within the last year, whilst 25% said they had never had training. Thirty-seven percent of antenatal staff reported never having received training and 19% had received training in the last year. Sixty-four percent of other medical professionals responding to the maternity service survey had never received training, as well as 67% of sonographers and 69% of support workers. Numbers were similar across Trusts, with 33-36% trained within the last year and 24-27% reporting that they had never had training.

The majority of GP practice staff had never received training (57%), with 21% receiving training more than 3 years ago and 7% in the last year (see Figure 13.2). Practice nurses reported slightly higher levels of training than GPs, with 12% being trained in the last year, 29% more than 3 years ago and 37% never receiving training. Warwickshire North CCG had slightly higher ratings for training in the last year with 16%, compared to 7% in South Warwickshire and 6% in Coventry and Rugby CCG.

More health visiting service staff appeared to have received training within the last year (42%). This was higher in South Warwickshire at 75%, compared to 45% in North Warwickshire and only 2% in Coventry. From the children and family centres survey 60% of children and family centre staff reported they had never received smoking in pregnancy training.

Need for further training
In discussion groups, all staff discussed the need for more training about smoking in pregnancy. Some Health Visitors and hospital midwives felt that additional face-to-face training, as well as online training, about the risks of smoking in pregnancy would be beneficial. All healthcare professionals felt that they needed more training about e-cigarettes due to mixed messages, as well as training about post-natal relapse and cannabis use in pregnancy.

The SSiP service staff felt that 'difficult conversations' training and motivational interviewing training would be beneficial to their role. Junior doctors also felt motivational interviewing training would help. Some FNP staff suggested that training in delivering hard-hitting messages would be useful. Managers suggested 2-days full training was needed, plus online training, to include support for those who may be harder to reach (e.g. young people, those with mental health issues and/or substance misuse).

GP practice staff felt that training specifically about smoking in pregnancy, not generic smoking, e-cigarettes and NRT would be advantageous. Some staff felt that e-learning modules could be helpful, while others preferred face-to-face training, or suggested a smoking cessation update afternoon. More frequent updates may boost confidence in talking to women about smoking in pregnancy. It was reported that product training would also be useful.

As shown in Table 13.3, in general, 61% of staff felt well trained in discussing the harms of smoking in pregnancy and CO monitoring. However, half of midwives either did not feel well trained about the harms of smoking in pregnancy or were unsure, whilst the majority of Health Visitors and all junior doctors did not feel well trained about e-cigarettes. UHCW midwives discussed the benefits of having a crib card containing brief messages about the harms of smoking in pregnancy. Low confidence was expressed by all staff regarding adequate training about NRT and e-cigarettes. Less than 5% of staff felt well trained about NRT and only 3% of staff felt well trained about e-cigarettes

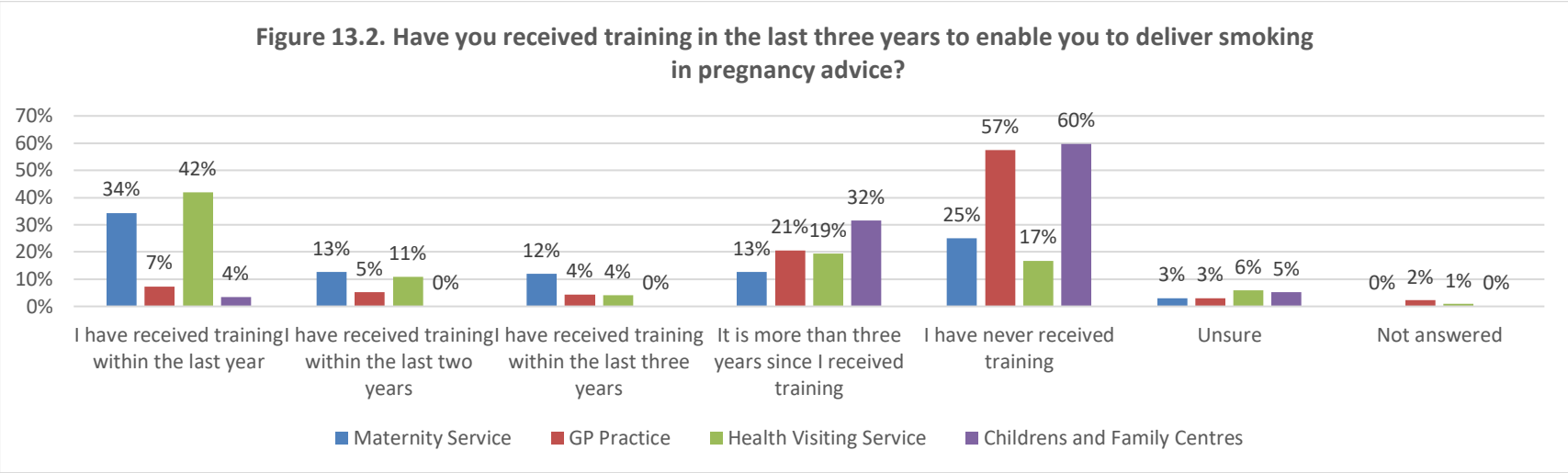


Table 13.3. Hands-up focus group responses to 'Do you feel well trained'

Topic	Yes					No					Unsure				
	TOTAL (*n* = 131; *n = 144)	Midwives (*n* = 88)	Junior doctors (*n* = 12)	Health visitors (*n* = 31)	FNP (*n* = 13)	TOTAL (*n* = 131; **n* = 144)	Midwives (*n* = 88)	Junior doctors (*n* = 12)	Health visitors (*n* = 72)	FNP (*n* = 13)	TOTAL (*n* = 131; **n* = 144)	Midwives (*n* = 88)	Junior doctors (*n* = 12)	Health visitors (*n* = 72)	FNP (*n* = 13)
Harms of smoking in pregnancy	*88 (61%)	39 (44%)	12 (100%)	29 (94%)	8 (62%)	*15 (10%)	15 (17%)	0	0	0	*41 (29%)	34 (39%)	0	2 (6%)	5 (38%)
CO monitoring	78 (59%)	76 (86%)	0	2 (6%)	n/a	48 (37%)	7 (8%)	12 (100%)	29 (94%)	n/a	5 (4%)	5 (6%)	0	0	n/a
NRT	5 (4%)	4 (5%)	1 (8%)	0	n/a	69 (53%)	44 (50%)	11 (92%)	14 (45%)	n/a	57 (44%)	40 (45%)	0	17 (55%)	n/a
E-cigarettes	*4 (3%)	2 (2%)	0	0	2 (15%)	*89 (62%)	46 (53%)	12 (100%)	31 (100%)	0	*51 (35%)	40 (45%)	0	0	11 (85%)

Figure 13.3. Maternity Services: Have you been trained to undertake Carbon Monoxide (CO) monitoring?

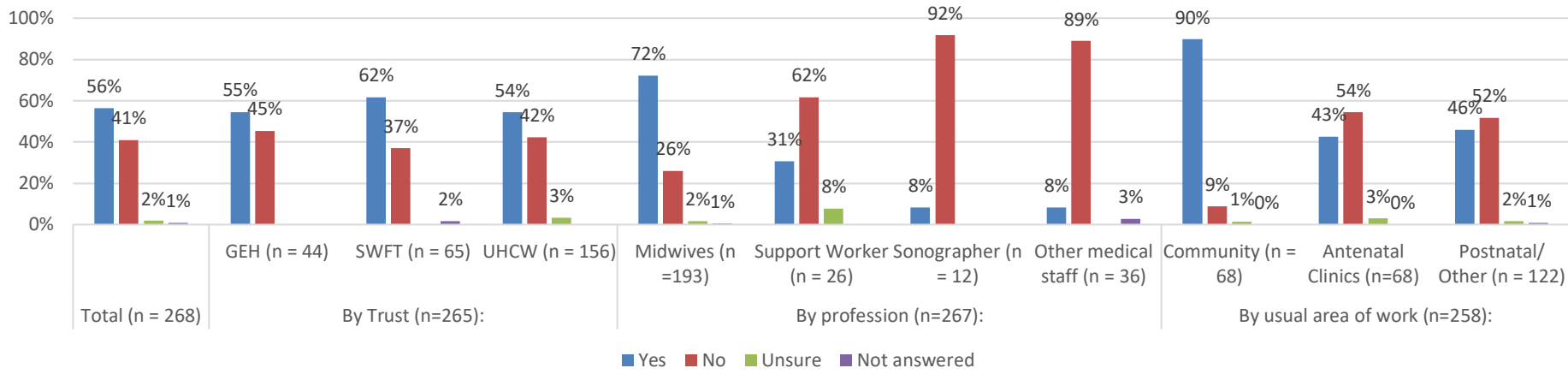
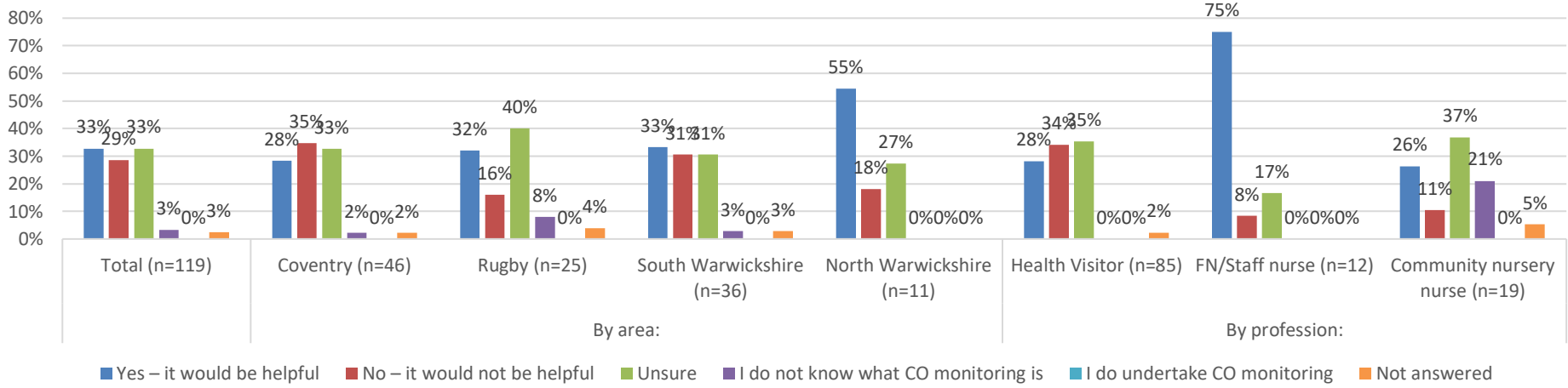


Figure 13.4. Health Visiting/FNP Services: Do you think it would be helpful if you were able to undertake CO monitoring?



Carbon Monoxide Monitoring
Overall, the majority of midwifery staff had received CO training, as shown in Figure 13.3, with 56% answering yes when asked if they had been trained and 41% saying no. This was higher for staff working in the community, with 90% reporting CO training compared to 54% of antenatal staff and 52% of postnatal staff answering no. By profession, 92% of sonographers, 89% of other medical staff and 62% of support workers reported not receiving CO training, while 72% of midwives had been trained.

When asked if they thought it would be helpful to be able to undertake CO monitoring, health visiting staff gave mixed responses (see Figure 13.4). In total, 33% answered yes while 29% answered no and 33% answered that they were unsure. This uncertainty was also shown by health visiting staff when asked in discussion groups, with only 6% of staff feeling that they were well trained in delivering CO monitoring.

Some Health Visitors thought that CO monitoring could prompt discussion of smoking, but the majority agreed that it would be difficult to implement (for example, carrying extra equipment and continuity of care) and would not be beneficial to their role or welcomed by women. This was seen as something midwives should do. As in both survey responses and in face-to-face discussions, family nurse practitioners thought that CO monitoring would help them to address smoking in pregnancy with 75% answering that it would be helpful (see Figure 13.4).

Maternity staff were asked an additional question about actions they take when a CO value level is raised above 4ppm in non-smokers. The responses to this question are detailed in appendix 20 and they indicate that not all of the recommended actions are currently being taken. For example, the most popular response was ‘Explain what a CO value is and why is might be raised’ (65% of all respondents), with 76% of midwives and 53% of community staff saying they would do this. The second highest number of responses were given for the option ‘Check the CO reading at the next appointment’ (61% of all respondents and 73% of midwives), although only 50% of community staff said they would do this.

When asked if they agreed with the statement that they were confident advising pregnant women about their CO result (see appendix 20), the majority of maternity staff agreed while 18% strongly agreed. Agreement was higher for midwives with 23% strongly agreeing and 42% agreeing. This was higher still for community staff, although some uncertainty was expressed with 10% of community staff strongly disagreeing with the statement and 7% disagreeing, while a further 10% neither agreed nor disagreed.

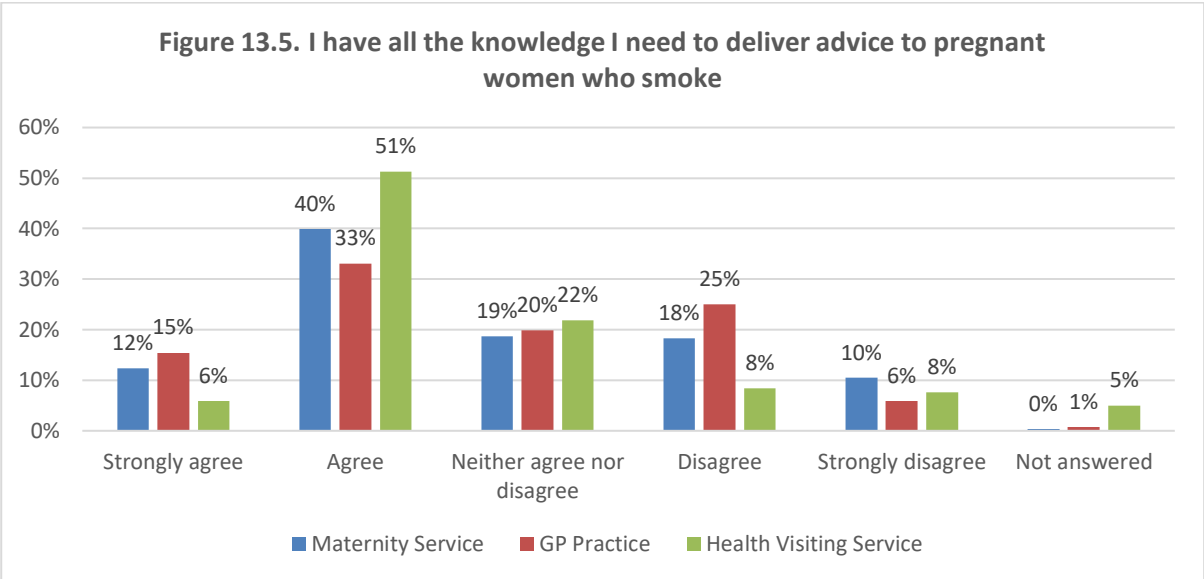
Knowledge about Smoking in Pregnancy
Figure 13.5 provides an overview of healthcare professionals’ views on whether they had enough knowledge to talk to pregnant women about smoking. When asked if they felt they had all the knowledge required to talk to pregnant women about smoking during pregnancy, 12% of midwifery staff strongly agreed while 40% agreed.

Looking specifically at job role, 48% of midwives agreed while 58% of sonographers and 46% of support workers strongly disagreed with the statement. In terms of community midwifery staff, 22% strongly agreed compared to 7% of both antenatal and postnatal staff.

For GP Practice staff, 15% strongly agreed, 33% agreed and 25% disagreed with the statement. This varied across CCGs, with more confidence expressed by SWCCG (35%

agreed) and NWCCG (42% agreed) than CRCCG (29% agreed). In contrast, 32% of practice nurses disagreed, illustrating inconsistencies in confidence about knowledge.

For the health visiting service, 51% agreed that they did have enough knowledge required, although this was lower for Coventry (33%) than Rugby (64%), South Warwickshire (69%) and North Warwickshire (45%). Less agreement was given by profession, with 58% of family nurses neither agreeing nor disagreeing and 25% disagreeing.



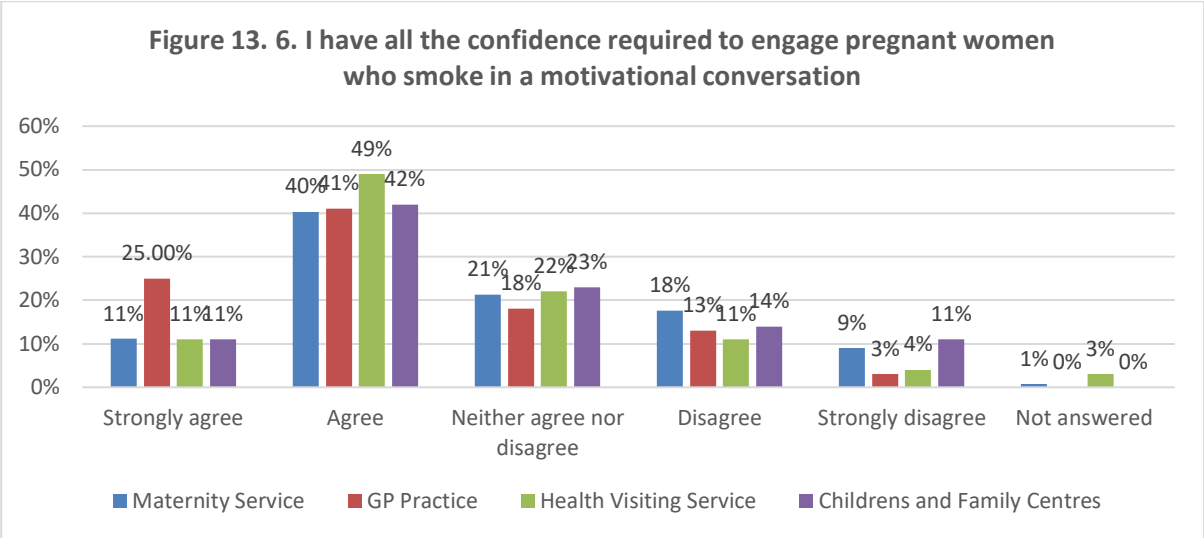
Confidence to Engage with Pregnant Women

In terms of expressing confidence in engaging pregnant women with discussion about smoking, 11% of maternity staff strongly agreed that they had all the confidence they needed, 40% agreed, 18% disagreed and 9% strongly disagreed (see Figure 13.6 for an overview across all services).

Within maternity services, support workers showed less agreement, with 35% neither agreeing nor disagreeing and 31% strongly disagreeing that they had confidence to discuss smoking. Forty-two percent of sonographers strongly disagreed with the statement.

For GP practice staff, 25% strongly agreed, 41% agreed and 13% disagreed. Staff from WNCCG expressed more confidence, with 32% strongly agreeing and 32% agreeing.

For the health visiting/FNP service, there was good agreement overall (11% strongly agreed and 49% agreed). This was marginally higher in South Warwickshire, with 58% agreement compared to North Warwickshire (55%) and Coventry (41%). Similar overall agreement was seen by children and family centres with 42% agreeing and 11% strongly agreeing.



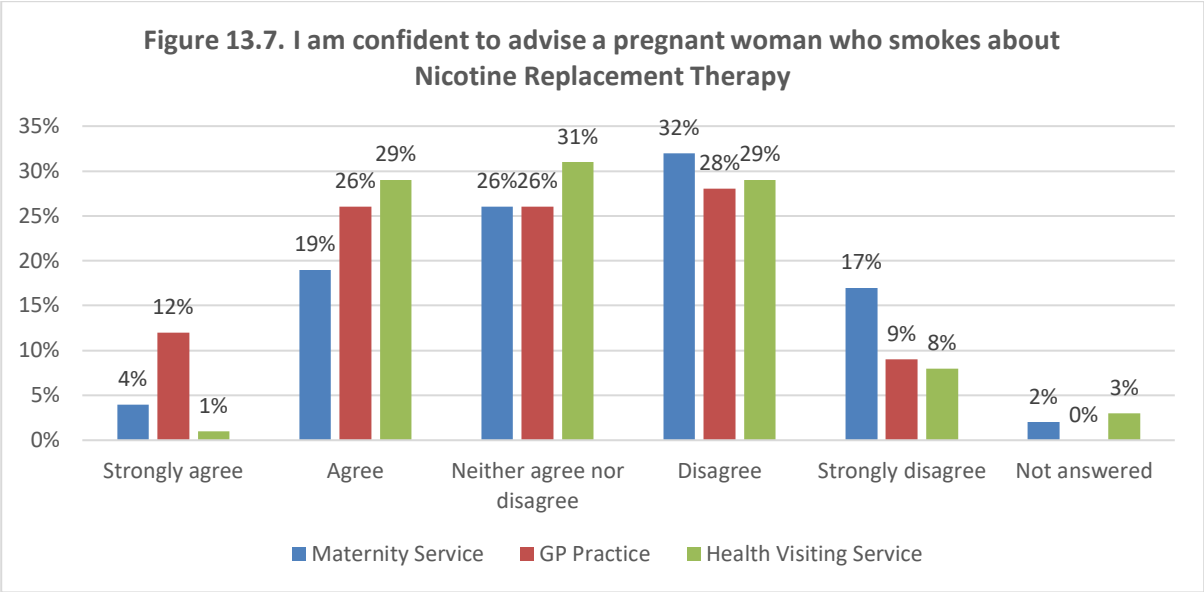
Nicotine Replacement Therapy

A low level of confidence was expressed regarding advising pregnant women about NRT across all groups of healthcare professionals compared to previous questions (see Figure 13.7). This was apparent across maternity staff, with 4% strongly agreeing that they had all the knowledge they needed about NRT, 19% agreed, 32% disagreed and 17% strongly disagreed.

Staff from GEH appeared slightly more confident with 27% agreeing with the statement, while 15% of SWFT staff agreed. Support workers showed considerably less agreement: 31% of support workers disagreed and 38% strongly disagreed, while 87% of sonographers strongly disagreed. Further uncertainty could be seen by usual area of work, with 31% of antenatal staff disagreeing and 22% strongly disagreeing, while 34% of postnatal staff disagreed and 16% strongly disagreed. 40% of community staff were uncertain and neither agreed nor disagreed.

Across groups of GP practice staff, 26-28% agreed that they had all the knowledge they needed about NRT, and 12% overall strongly agreed. More disagreement was seen from SWCCG staff, with 40% disagreeing compared to 32% of both WNCCG and CRCCG staff.

Further uncertainties were expressed by health visiting staff, with 1% strongly agreeing, 29% agreeing, 31% neither agreeing nor disagreeing and 29% disagreeing. Staff working in Rugby were slightly more confident with 44% agreeing that they had enough knowledge about NRT. Family/staff nurses were less confident with 42% disagreeing with the statement.



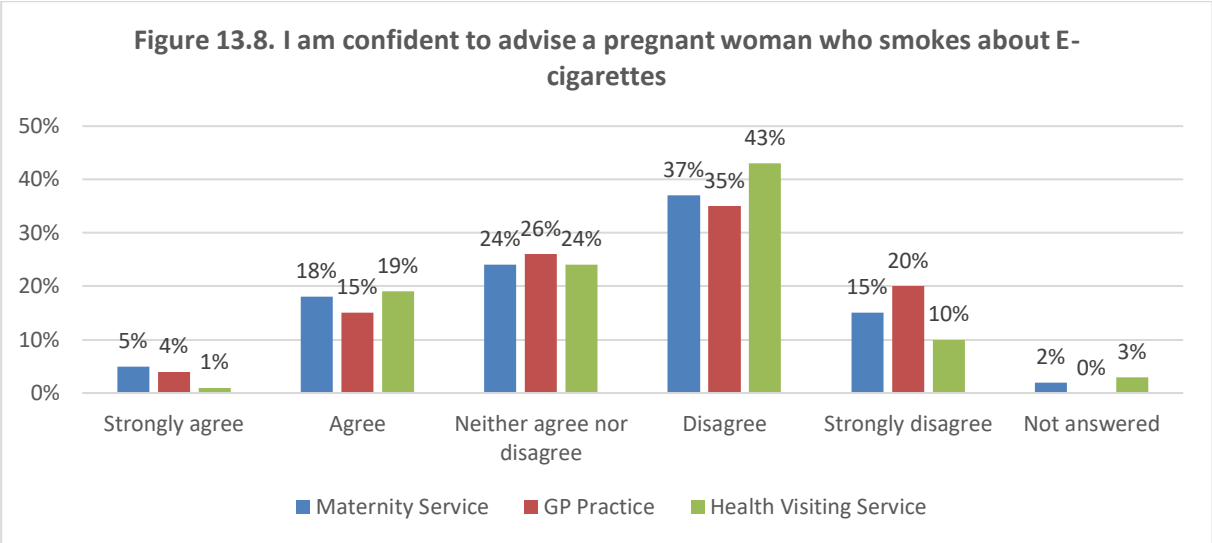
E-cigarettes

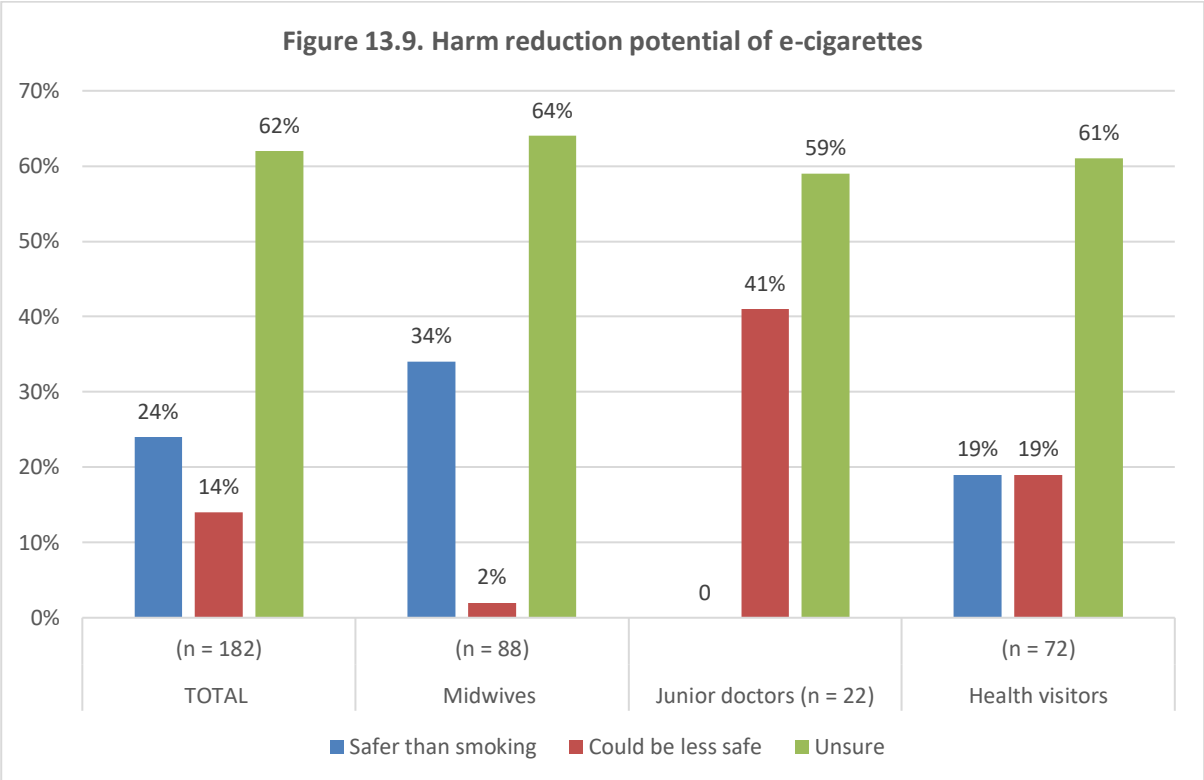
Low confidence was seen across all groups for talking to pregnant women about e-cigarettes (see Figure 13.8). When asked if they agreed with the statement that they were confident in advising a pregnant woman who smokes about e-cigarettes, 37% of maternity staff disagreed with only 18% agreeing.

Forty-five percent of UHCW staff disagreed, while 38% of support workers and 58% of sonographers strongly disagreed. In terms of community staff, 34% disagreed and only 22% agreed. Further disagreement was seen from postnatal staff with 41% disagreeing.

Of GP staff, 35% disagreed that they had confidence to discuss e-cigarettes while 4% strongly agreed and 15% agreed. Less confidence was seen across SWCCG (40% disagreed) and NWCCG (47% disagreed) than CRCCG (30% disagreed). 43% of health visiting staff disagreed; this was higher for Coventry staff (59% disagreed) while slightly more confidence was expressed by staff working in Rugby (40% agreed) and North Warwickshire (36% agreed).

Figure 13.9 below illustrates the uncertainty expressed by healthcare professionals in discussion groups regarding the safety of e-cigarettes, with 62% of staff across groups being unsure about the harm reduction potential of e-cigarettes. Indeed, 41% of junior doctors felt that e-cigarettes could be less safe than smoking tobacco cigarettes. This uncertainty is likely to have an impact on healthcare professionals' confidence in talking to pregnant women about the potential of e-cigarettes as a stop smoking aid or being able to answer women's questions about e-cigarettes, as shown above and in Figure 13.8.





Referring to Local Services

When asked if they were clear about the referral process to local smoking cessation services, 59% of maternity staff said yes and 32% said no (see Figure 13.10). This was higher for midwives: 70% said yes compared to 62% of support workers and among sonographers 67% said they did not know how to refer women. Ninety-one percent of community staff answered positively compared to 45% of antenatal and 47% of postnatal staff.

Health visiting staff appeared to be clearer about the referral process than maternity staff in general, with 72% indicating that they knew the process. North Warwickshire health visiting staff were slightly less clear, with 55% saying yes compared to 72% of South Warwickshire, 76% of Rugby and 74% of Coventry health visiting staff.

Community and nursery nurses were less clear about the referral process with 37% saying yes and 32% stating that this was not applicable to their role. Sixty-seven percent of health visiting staff would always make a referral to SSiP service, and this ranged from 64% (Rugby) to 73% (North Warwickshire) across service areas.

The majority of GP practice staff (44%) stated that they would refer pregnant women who smoke to their practice in-house smoking cessation service (see Figure 13.11). Twenty-two percent of GP practice staff would refer to the midwife, while only 7% would refer to the Stop Smoking in Pregnancy Service. More staff (11%) would refer to the general stop smoking service. Practice staff from SWCCG referred to the local Stop Smoking in Pregnancy Service slightly more often (13%).

Children and family centre staff would largely signpost pregnant smokers to their GP (24%) or midwife (28%), while 16% would refer to the local Stop Smoking in Pregnancy Service and 11% to the general stop smoking service.

Figure 13.10. Maternity Services: Are you clear about the process for making a referral to local smoking cessation services?

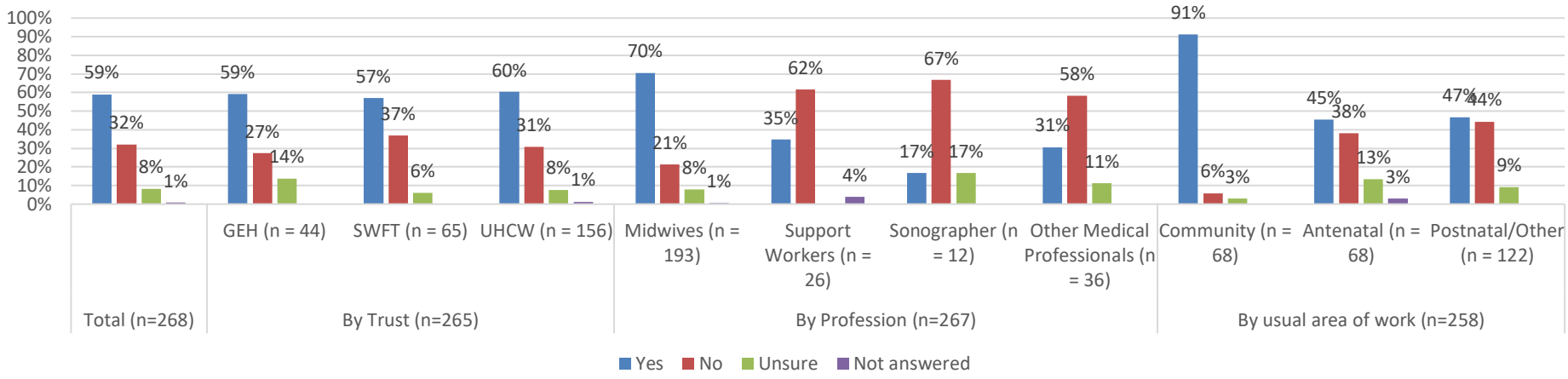
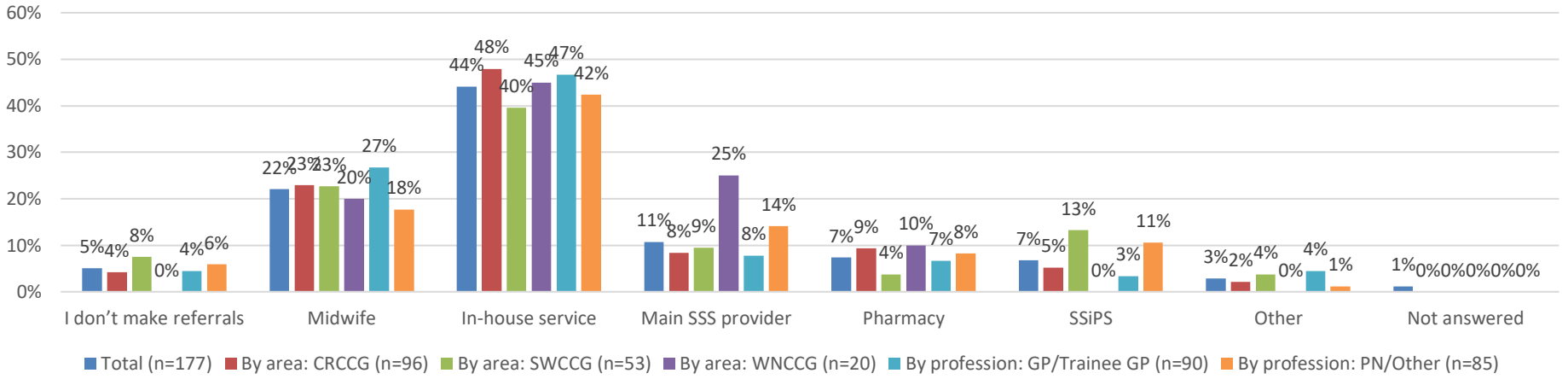
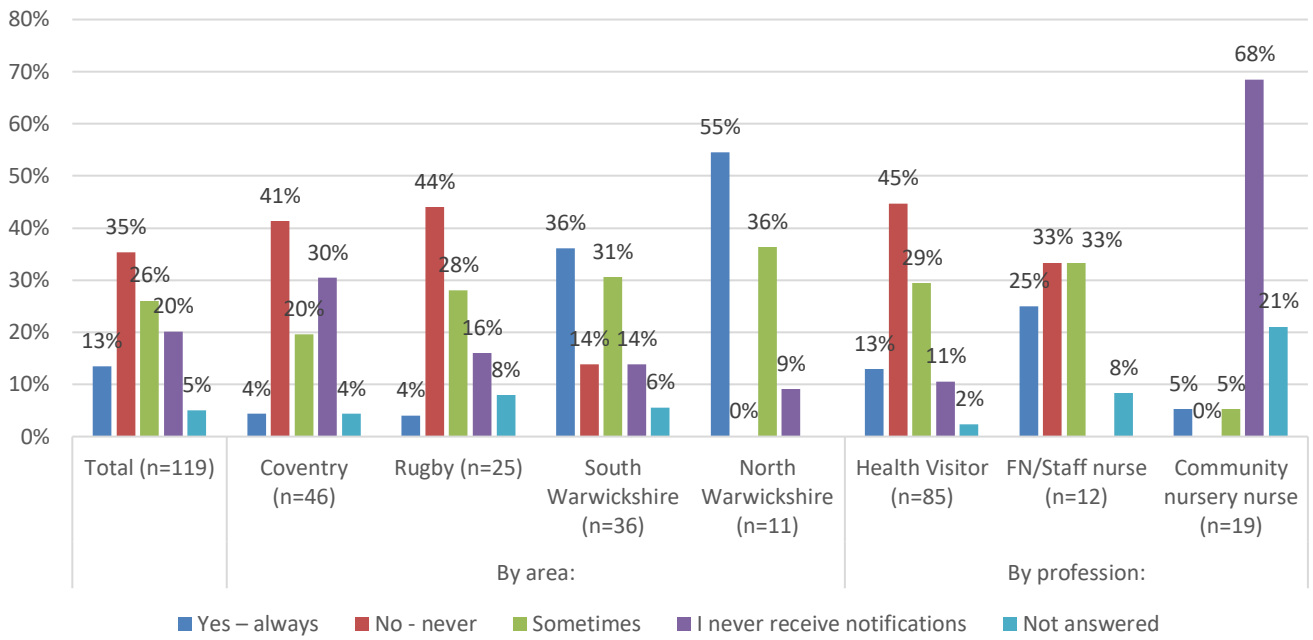


Figure 13.11. GP Practice Staff: If you refer a pregnant woman who smokes, which service do you refer to?



Health visiting staff highlighted the issue that notifications they receive from midwifery generally do not report a woman's smoking status, with 35% answering no and only 13% answering yes when asked if antenatal notifications state whether a woman is a smoker (see Figure 13.12). However, this was not consistent across all areas, with 44% of staff in Rugby stating that notifications never show a woman's smoking status while 36% of staff from South Warwickshire and 55% of staff from North Warwickshire stated that notifications always show a woman's smoking status.

Figure 13.12. Health Visiting Services: When you receive an antenatal notification from midwifery does it state whether a woman is a smoker?

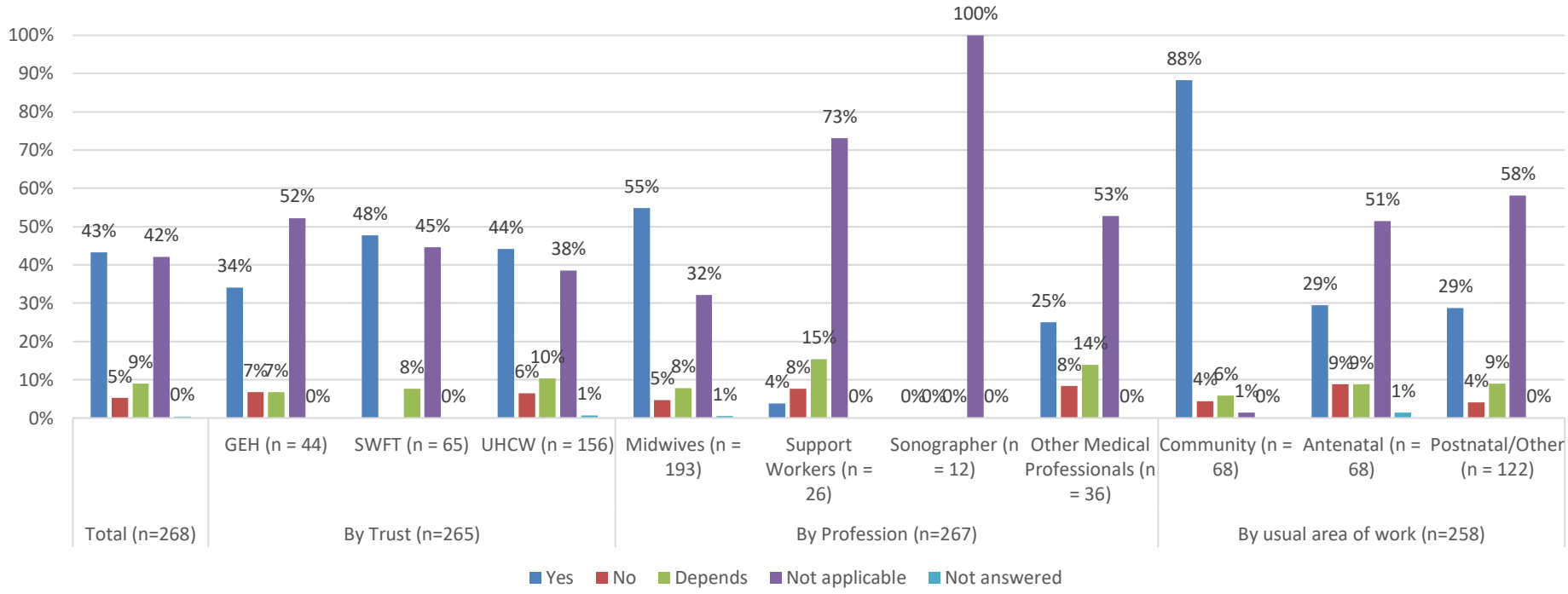


Further questions were asked of maternity service staff regarding referral to the SSiP service. Midwifery staff said that they do not always refer pregnant women who smoke to the SSiP service at booking, with 43% of staff saying they always referred and 42% stating that this was not applicable to their role. However, among community midwives 88% reported consistently making referrals (see Figure 13.13). For those that did not always refer, this was largely because women often decline or do not accept a referral, and staff appeared to want to give them the choice.

Health visiting staff were also asked if they always referred smokers to SSiP services when making an antenatal/postnatal assessment, with 67% of all staff saying they always made a referral. This was higher for North Warwickshire (73%) staff and for Health Visitors (75%) and FN/Staff nurses (75%), but low for community nursery nurses (21%) who largely said this was not applicable to their role (53%) (see Appendix 21). Reasons given for not always referring were largely due to women declining referral or not wanting to stop smoking).

Appendix 21 also shows further data from midwifery relating to referrals. If women who smoke decline referral to the SSiP service at booking, 46% of maternity staff said they would always offer re-referral at the next appointment while 42% of staff said this was not applicable to their role.

Figure 13.13. Maternity Services: If making an assessment at booking do you always make a referral to smoking cessation services when a pregnant woman confirms she is a smoker?



Responses for always offering re-referral were slightly higher for midwives (54%) and considerably higher for community staff (71%) compared to antenatal staff (49%) and postnatal staff (30%).

When asked if they always offered a referral for pregnant/postnatal smokers to SSiP services if making an assessment at other points of pregnancy, 54% of staff said they would while 22% said this was not applicable to their role. Again, positive responses were higher for midwives (63%) and very high for community staff (88%).

Partner/Other Household Smokers

In terms of asking women if their partner smokes or if other household members smoke, 63% of maternity staff said they always enquire. This was higher for midwives (77%) and higher still for community staff (94%). For the health visiting service, 87% of staff said they always ask about partner/other household smokers. This was high across all Trusts and for both Health Visitors and FN/staff nurses. For community nursery nurses, 21% said they only asked this sometimes, while 16% said that this was not applicable to their job role.

Children and Family Centre staff were asked if they agreed with the statement that they used opportunities to give brief advice on smoking to partners/other family members of pregnant women who smoke. Only 7% of staff strongly agreed with this statement, while 32% agreed, 26% neither agreed nor disagreed and 26% disagreed. Data from maternity services, health visiting services and children and family centres for this section can be seen in appendix 22.

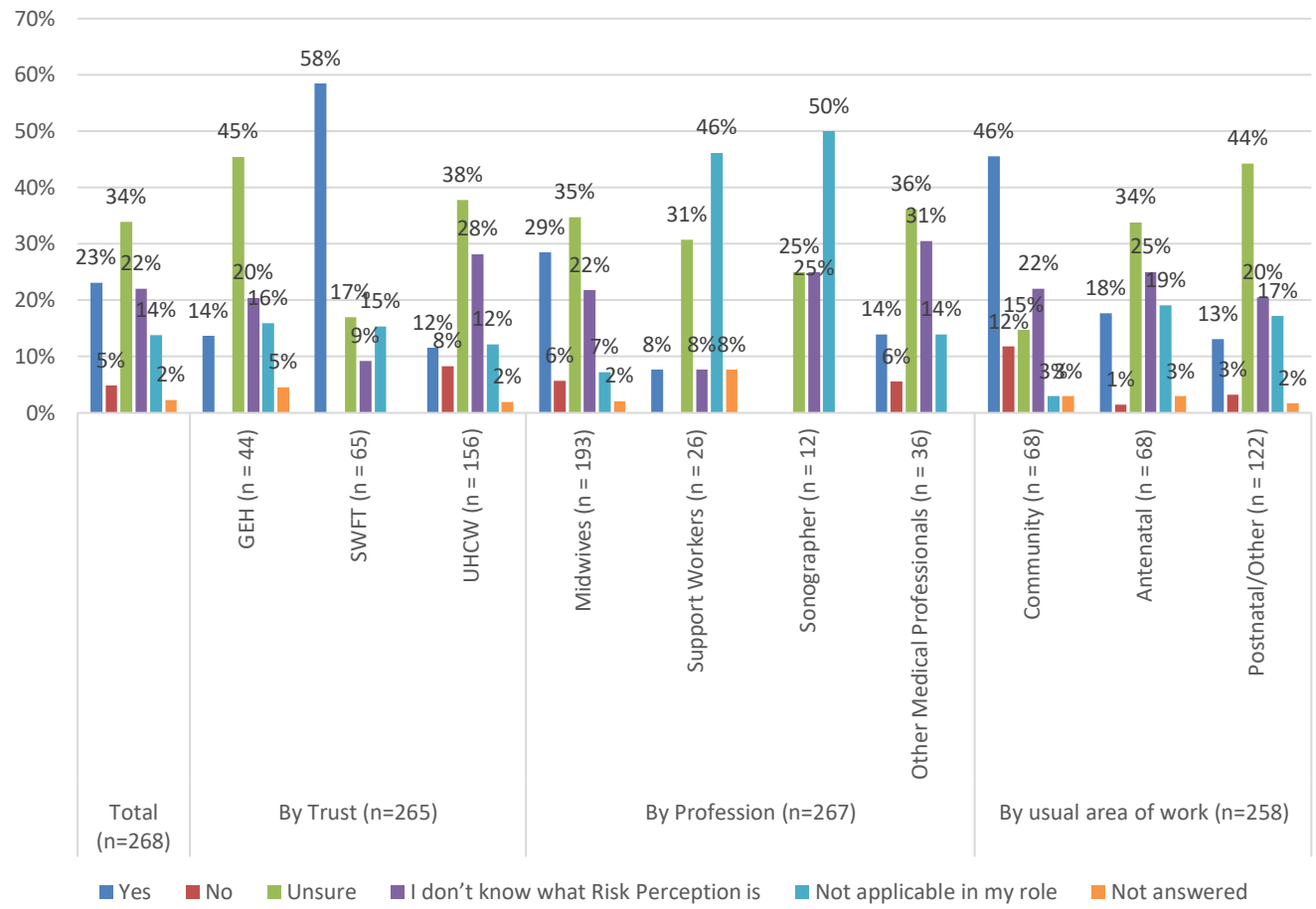
Time pressures and competing interests were given as reasons for not always asking about partner/household smokers.

Risk Perception Intervention

Figure 13.14 illustrates inconsistencies in implementation of the Risk Perception Intervention across Trusts, with 58% of SWFT staff stating that their Trust offers a Risk Perception intervention, compared to 12% of UHCW staff and 14% of GEH staff. Across all maternity staff, 34% were unsure if their Trust offered this intervention while 14% did not know what Risk Perception was. This reflects the limited availability of the RPI across Trusts, with SWFT only really offering this intervention.

When asked if they checked whether a referral to Risk Perception had been offered to women who did not accept SSiP service support, 46% of midwifery staff said they always checked this while 26% said that they did not. Positive responses were higher for community and antenatal staff (both 58%). Reasons for not always checking included forgetting, lack of time, and not being sure where to access the information. This data can be seen in appendix 24.

Figure 13.14 Maternity Services: In your trust is a Risk Perception Intervention offered to women who smoke but who do not engage with the smoking cessation service?



Postnatal Advice

Appendix 23 shows data relating to postnatal advice. When asked if they enquired about smoking during postnatal care, 44% of maternity staff said yes while 27% said this was not applicable to their role. Sixty-nine percent of community staff said they would enquire about smoking when providing postnatal care. For health visiting staff, offering postnatal advice to women who smoked but quit during their pregnancy was seen to be very important by 60% of all staff. This was higher for staff from South Warwickshire (72%). A high proportion of health visiting staff felt that it was very important in their role to offer postnatal advice to women and their partners who smoked during pregnancy and continue to smoke (75%). This was also very high for the importance of offering antenatal/postnatal advice about secondary exposure to smoke, with 82% of all health visiting staff saying this was very important.

Barriers to Talking to Pregnant Women About Smoking

Time constraints were listed as the largest barrier to offering smoking in pregnancy support by maternity staff (29%) and Health Visitors (29%), although this was less of a barrier for children and family centre staff (6%). In discussion groups, junior doctors discussed not having the time for full discussions but could talk about smoking briefly if a pregnant woman identified as being a smoker. Competing co-morbidities may be prioritised above smoking. The SSiP service have time

specifically for discussing smoking with pregnant women but service capacity can impede on this, as well as taking time contacting women from referrals (particularly if they are given incomplete/incorrect details in the referral).

Lack of training was the biggest barrier listed by children and family centre staff (28%), the second highest barrier for maternity staff (19%) and third highest for health visiting staff (13%), while resources and access to literature for patients was third highest for maternity staff (16%) and second highest for health visiting staff (21%). This is discussed in more detail in Section 13.14 below.

Lack of knowledge about the referral process was a considerable barrier for both maternity staff in general (15%) and for health visiting staff (9%). In discussion groups, this was also raised as an issue by junior doctors and was recognised as a concern by those working in the SSiP service.

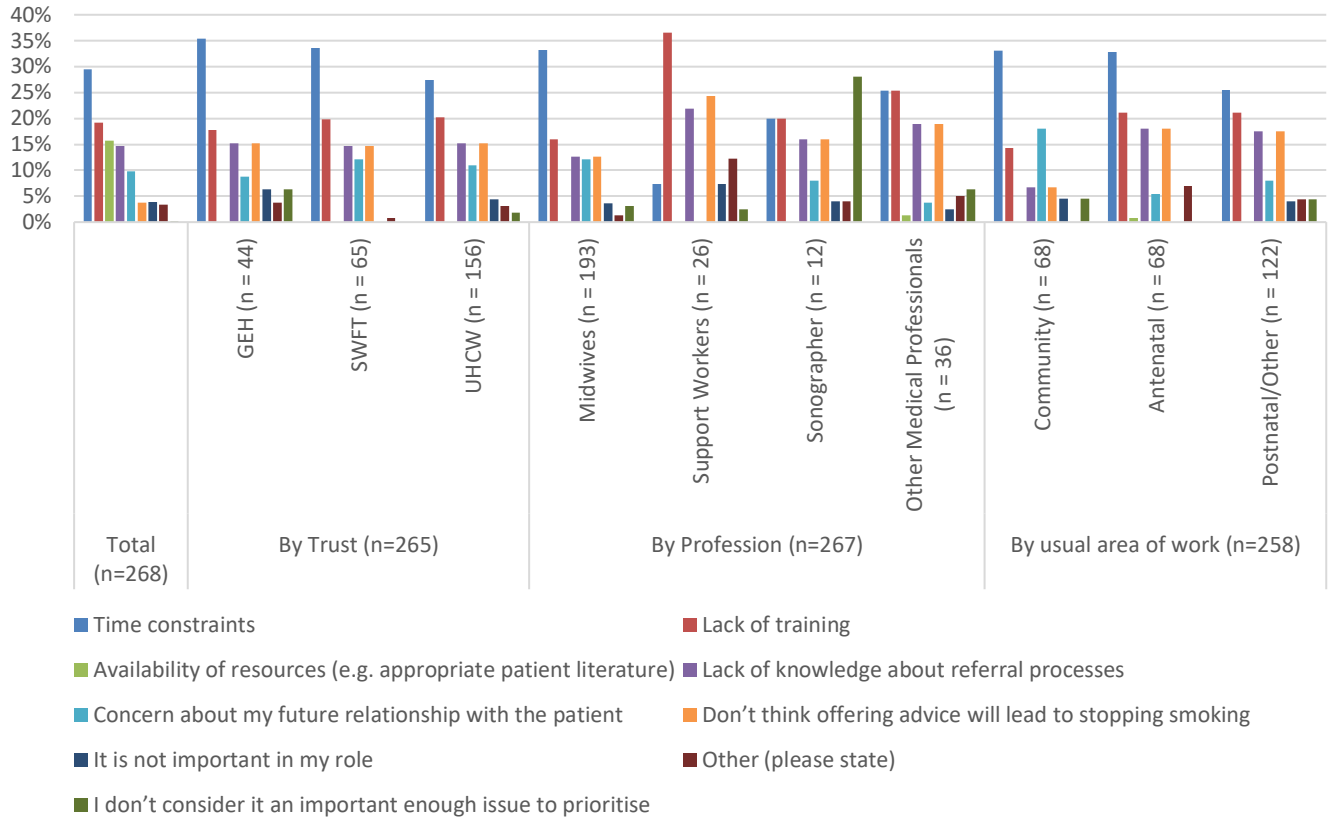
Junior doctors and hospital-midwives often assumed that community midwives would have made the referral earlier in pregnancy. Doctors would ask midwives to refer women if they had not already been referred. Health Visitors, and some hospital midwives, often felt it was too late to refer pregnant smokers by the time they first saw them (for example, at 36 weeks) and were unsure of how to refer. The SSiP service discussed how hospital midwives need to make more referrals at any stage of pregnancy and that this needs to be routine procedure.

Concern about the future relationship with the patient was more of a barrier for health visiting staff (12%) than maternity staff (10%), although 18% of community midwifery staff felt this to be a barrier. In discussion groups, a number of midwives raised concerns about offending women at the start of their relationship by talking about smoking. Health Visitors discussed wanting to be ‘client-led’ and that not all smokers would prioritise discussion of this at appointments. Opportunity was the second largest barrier given by children and family centre staff (23%) and lack of knowledge of the referral process was the third largest barrier (21%).

Across discussion groups, some midwives and Health Visitors questioned the ethics of referring women without their consent. Not all women want to be referred, so if the healthcare professional thinks they need the woman’s consent they may ask them directly and then not refer. The SSiP service discussed how a number of women are declining referral at their booking appointment. This should be an opt-out pathway and automatic referral. FNP service staff discussed how women who quit smoking early in pregnancy but then relapse later during pregnancy may not get referred for support.

The complexity of women’s lives was also discussed in groups by the SSiP service, midwives, Health Visitors, FNPs and managers. Women with complex lives may find it hard to imagine not smoking as they have too many issues to deal with and can be reluctant to engage with support. Discussing smoking is not always a priority for the healthcare professional if they need to deal with other issues such as domestic violence. Figure 13.15 below shows a representation of the barriers faced by maternity staff in talking to pregnant women about smoking.

Figure 13.15. Maternity Services: What are the biggest barriers you face in offering advice and support in relation to smoking in pregnancy? Please tick all that apply.



13.2 What needs to change: Based on Staff Views

Through the staff surveys and discussion groups, views were sought with regard to aspects of current provision that if changed would lead to improvement in the way smoking in pregnancy is identified and managed. The key points raised through these mechanisms are described below.

SSiP Service provision

Many views were expressed indicating that more time and money need to be invested in the north of the Warwickshire and within Coventry where demands on the SSiP services are greatest. Service capacity needs to be increased with more time to focus on preventing relapse or dealing with postnatal relapse. The services are not currently set up to support women postnatally. Health Visitors need to know which women have had support from the service. Some women with complex issues may need multiple visits from the SSiP service before they can consider quitting and to keep them engaged. The SSiP service need to be more present in Children's Centres (this was being trialled at the time of discussion). Managers suggested that a revised model of SSiP service is needed. GP practice staff felt that a named person from the Stop Smoking in Pregnancy Service to refer to directly or to provide training may also be worthwhile. Staff also discussed how more funding for local services would be of benefit, as would a clearer referral pathway from midwifery. Providing more venues in the community to support women could also help.

Smokefree homes and cars
More work is needed with partners/families. This should not only be offered if the partner/family are present when the SSiP service see a pregnant woman and not only if the pregnant woman is a smoker. There was a suggestion to increase service capacity (see above) so advisors can work evenings and weekends. The focus needs to be on smokefree homes rather than only focusing on the pregnant woman. Social housing providers could promote smokefree tenancy, e.g. provide free vaping kits and penalties for smoking. FNP service staff suggested that this could be explored with Housing Project in North Warwickshire. There is also a need to promote smokefree cars.

Immediate access to NRT and support
There is a need to embed smoking in pregnancy support in maternity services so that women have immediate access to NRT and support. Having support embedded in maternity services may stop women being 'lost' in the system. SSiP service support available in antenatal clinics would be beneficial.

Clarify roles and responsibilities
There is a need to clarify the roles of all healthcare professionals in addressing smoking in pregnancy to allow for continuity of care through the care pathway and a consistent approach. Clear guidance on the referral process and training are also required for all staff. All healthcare professionals need to enforce the no smoking policy, for example outside of maternity units (there are some issues with approaching women in a non-confrontational manner). This needs to be wider than just maternity services. A consistent approach is needed with smoking mothers/parents of babies in SCBU/NIC. Health Visitors questioned whether they should just be signposting/referring women who smoke as their capacity to do any more is limited. Maternity support workers' role in smoking cessation could be expanded but they would need more capacity and training.

Knowledge
GP practice staff discussed needing to know where and what services were available to signpost women to and requiring more information about the referral process. They felt that more pregnancy-specific information about smoking and support on how to advise women about smoking would be helpful. Not all staff appeared to be aware of the specialist services available in Warwickshire and Coventry. Information about products and guidelines on what products can be offered in pregnancy would also be beneficial.

Resources
A crib sheet/script with FAQs and advice on what to say about smoking in pregnancy would be helpful for junior doctors and midwives. Shocking or hard-hitting images or videos showing the risks of smoking in pregnancy could be used on social media. Midwives felt that more patient literature was required for women to read at home, available in multiple languages. CO monitors are required across the maternity services, including on wards and hospital clinic/units. GP practice staff discussed how leaflets could be provided to give out to women, plus a website or app (with self-help information) to signpost women to as follow-up. Further suggestions included the idea of staff providing NRT and having CO monitors in each room.

Improved Identification of Pregnant Smokers
If all healthcare professionals could easily identify pregnant women who smoke, this would help with referrals and following women through the care pathway.

Pre-conception Care/education in Schools
More emphasis on stopping smoking is needed in schools and colleges, particularly improved prevention advice and support to prevent relapse for quitters. FNP staff discussed needing to work with the Looked After Children service and youth workers to tackle pre-pregnancy smoking.

Opportunities for Pre-natal Advice
GP practice staff discussed suitable appointments for talking to women about smoking before pregnancy. Contraception appointments/family planning clinic, fertility, smear tests, vaccination appointments and health checks are all opportunities for discussing smoking. Patients' future plans could be discussed at contraception reviews or if they ask for pre-conception advice.

Opportunistic approach: Many staff mentioned that all appointments are an opportunity to discuss smoking cessation if the opportunity arises or if staff know the patient to be a smoker. Routine appointments can provide the opportunity if a woman mentions trying to get pregnant.

Resources: Posters, TV screens and leaflets in waiting rooms can all provide information about the need to stop smoking before pregnancy. Media coverage/public health campaigns ('Stoptober') and education in schools can also provide this information. No opportunities: Some staff felt that there were no opportunities for this, stating that it was rare for a woman to attend for pregnancy counselling/pre-conception advice.

What can others do?: Sonographers
Views were expressed indicating that sonographers could contribute more to smoking cessation in pregnancy, recognising the importance of what they say to women who smoke (for example, saying a woman's baby looks 'fine' may reassure a smoker that she can carry on smoking). Options for offering CO monitoring or just giving brief advice were discussed.

What can others do?: Midwives
It was felt that hospital-based midwives can do more by referring women at any stage of pregnancy and offering brief discussions. Health Visitors felt that smoking should be midwife-led and felt that all they could do is refer/signpost to the specialists. Having access to CO monitors in all areas would help, and maternity support workers could be utilised more for this. More risk perception midwives are needed with dedicated capacity for working on smoking in pregnancy.

What can others do?: Health Visitors
Some health visiting staff felt that increased contact time with clients and active clinics or home visits for clients who smoke could be beneficial, while other staff felt that signposting women to services was their main role regarding smoking in pregnancy and they could do no more than this given their workload.

What can others do?: Children and Family Centres
Children and family centre staff felt that existing clinics and hub staff could be utilised, such as offering advice/support at the baby weigh-in clinic and antenatal and postnatal clinics, and groups could be run for expectant mothers. The SSiP service could have advisors at these groups.

Contrasting opinions were shown by children and family centre staff about smoking in pregnancy:

'I used to be a smoker so I completely understand how difficult it is to give up… I feel I can be supportive to any smokers using the centres' – administrative staff

'I used to smoke so I never preach to anyone' – administrative staff

'I am very anti-smoking and find it difficult to understand how/why people smoke in pregnancy and in fact all smokers' – Family hub assistant

'I've never been a smoker so find it difficult to relate to the issues it imposes, in general and in pregnancy' – Early years practitioner

What works better elsewhere?
A particular theme explored through the discussion groups related to finding out if staff would recommend changes to current provision based on their experience elsewhere. The key points raised are summarised below.

In-hospital smoking cessation support
There was discussion across some groups of healthcare professionals that the SSiP service needs to be present in the clinic/hospital to enable immediate access to specialist support. This was being trialled in Nuneaton at time of writing. An alternative would be for the midwife to give NRT to women who they are referring to the SSiP service.

NRT prescribing
The SSiP service cannot carry NRT but this would be useful, particularly due to pharmacy issues in stocking the right products and being part of the voucher scheme. There is a need for access to NRT in hospital for all smokers. Doctors reported not prescribing NRT within maternity services at UHCW but they had done so in other hospitals.

Risk Perception
This is working well in SWFT, although not at the optimal time (ie not being delivered alongside the 12 -week scan) and the service has limited capacity, but it is not currently being delivered in GEH or at UHCW. In addition, having a dedicated Public Health midwife is very beneficial in SWFT and views were expressed that this is needed in GEH. Maternity services need to work with the SSiP service so that there is a streamlined service across all Trusts in the region and that all women can be tracked to ensure that no one is missed.

Additional Support to Help Women to Quit
Some staff felt that visual aids/pictures/video resources/leaflets and posters in clinics could help, as well as adverts on social media/tv/radio and Public Health messages. Again, earlier interventions in schools and during early pregnancy were felt to be beneficial. Drop-in clinics, postnatal support, home visits, peer support, group work and incentives were all suggested as possibilities for increasing smoking cessation in pregnancy.

13.3 Summary of Findings

Discussion of smoking in pregnancy was seen to be an important issue for healthcare professionals across maternity services, GP practices, health visiting services and children and family centres, with some degree of variability within services dependent upon the role of the staff/healthcare professional.

While it was acknowledged that this is an important area for discussion, there are a number of issues with delivery in practice. Detailed knowledge of smoking in pregnancy by staff is often lacking due to an absence of recent training specifically relating to this issue. This can have an impact upon healthcare professionals' confidence in talking to pregnant women about smoking.

In particular there does appear to be opportunities to enhance the knowledge and contribution of some staff groups. For example, midwives working in antenatal and postnatal settings may be lacking knowledge and training as this tends to be more concentrated amongst community staff. GPs and junior doctors likewise report receiving little training. Healthcare professionals need to feel more confident in their knowledge on this issue so they can provide a consistent message to pregnant women.

This is reflected in responses to questions relating to training, with all services showing some variability in the recency of training relating to smoking in pregnancy. Staff across all groups discussed the need for more training, including face to face training and further training about CO monitoring, nicotine replacement therapy and e-cigarettes. Frequent updates to keep their information current would also be beneficial.

Health Visitors varied in their response to whether CO monitoring training would be beneficial to their role, suggesting that while it could offer some benefit, time issues and dearth of contact with clients would likely lead to a lack of continuity unless the service is expanded in some way.

Variability also exists in knowledge of the referral process for referring pregnant smokers to the Stop Smoking in Pregnancy Service. As expected, community midwifery service staff were considerably more aware of the referral process than other groups of healthcare professionals, although this does indicate that there would be benefits if the awareness of other staff groups was increased.

GP practice staff largely refer women to the in-house practice cessation service, where this was available, although these services do not provide pregnancy specific support which is available through the SSiP service. GP practice staff were also more likely to refer women to generic stop smoking support than the SSiP service.

Awareness of the SSiP service and the referral process needs to be raised across all groups of healthcare professionals.

A number of midwives who assess women at the booking appointment appeared to be reluctant to refer smokers to the SSiP service, particularly if the woman said no or suggested that she wanted to keep smoking. Questions over the importance of choice and being given the option to be referred or not remain, despite the referral being an opt-out process with women able to decline the service once contacted directly by the SSiP service.

Availability and knowledge of the Risk Perception intervention varies across Trusts as this is not standard practice in all areas. SWFT are further ahead than other areas on this issue, although a number of staff within the Trust remain unsure of what this intervention is. A number of staff across other Trusts are also not aware of what this intervention is but this is likely to be because it is not yet a standard part of the care pathway. A consistent approach across all Trusts would be beneficial.

Considerable barriers remain which obstruct healthcare professionals' ability to engage with pregnant women who smoke about smoking in pregnancy. Issues such as time constraints, lack of training, lack of knowledge about the referral process and concern about future relationships with women appear to be problems faced by all groups of healthcare professionals. Again, there are indications that women who decline referral or clearly do not want to be referred are not being referred in-line with clinical guidance. Questions of the ethics of referring women without their consent were also raised by the health visiting service. This is an area where up-to-date training on current guidance and policies would be of benefit for all healthcare professionals.

13.4 Suggestions for Improvement

Healthcare professionals gave good suggestions for how the current care pathway and service provision can be improved. Perhaps the most important of these is the need to clarify roles and responsibilities across and within services and Trusts. Clarity about the referral process is key, as well as a consistent approach from all healthcare professionals which can be gained from regular training about smoking in pregnancy and also about local policies and service provision.

Midwifery services could be enhanced by expanding the role of the maternity support worker, although this would require more funding and training. Providing NRT to pregnant smokers as soon as they have been identified and before they engage with the SSiP service would be beneficial. Allowing midwives and the SSiP service to carry NRT products may reduce some of the barriers faced by pregnant women during early pregnancy and may increase engagement with the SSiP service.

Suggestions of focusing on the wider household of the pregnant smoker were also made, so that services focus on smokefree homes rather than the pregnant woman alone. Managers and front-line staff recommended that a revised model of SSiP service provision is required, perhaps with services being embedded within the maternity service.

Expanding SSiP provision to work with the whole household as a matter of routine and also being able to work with postnatal women as required would also be beneficial. If the SSiP service can be embedded into midwifery services, this would create a seamless referral process; expanding the service to work in the community and family clinics where these exist could also be of benefit.

An exploration of what physical resources could be provided to each service and how this could be of benefit to pregnant smokers could also be implemented as a large proportion of healthcare professionals suggested a need for visual resources. The right level of resource would be required in order to engage women as various options have been trialled before by the SSiP service. Working to raise awareness about the need to stop smoking before pregnancy was also reiterated across groups of healthcare professionals, including school education and using an opportunistic approach in primary care appointments.

More risk perception midwives would be required across the Trusts for this intervention to be delivered consistently.

There are strong indications that the contribution of sonographers could be strengthened whilst recognising the pressures in scanning departments. There is an opportunity to raise awareness of ways in which they could contribute in terms of consistent messages to women about the risks of smoking in pregnancy during the short time that they see them. This is a clear area for further work.

Key Findings: Staff Engagement

- **Smoking in pregnancy is generally recognised as a very important issue with 70% of all survey respondents identifying it as such. This did vary across professional groups with 85% of community midwives, 85% of GPs and 73% of Health Visitors seeing it as a very important part of their role, while 58% of the sonographers responding said smoking was not important to their role**
- **Relapse prevention advice was reportedly always given by 33% of Health Visitor service staff, but there was some variation by geography with higher proportions reporting providing such advice in Coventry and North Warwickshire**
- **Between 75% and 82% of HV service staff considered providing advice about second-hand smoke exposure to be very important**
- **When asked if they had all the knowledge required to talk to pregnant women about smoking in pregnancy only 52% of midwifery staff agreed or strongly agreed with the statement. 58% of sonographers and 46% of support workers strongly disagreed with the statement – so feel they lack the required knowledge**
- **For the health visiting service, 51% agreed that they did have enough knowledge required, although this was lower for Coventry (33%) than Rugby (64%), South Warwickshire (69%) and North Warwickshire (45%).**

- **In terms of expressing confidence in engaging pregnant women with discussion about smoking, 11% of maternity staff strongly agreed that they had all the confidence they needed, 40% agreed, 18% disagreed and 9% strongly disagreed (ie 27% of maternity lack confidence to have the conversation)**
- **There is widespread uncertainty about e-cigarettes with 62% of staff across groups being unsure about their harm reduction potential, with in particular 41% of junior doctors feeling that they could be less safe than smoking tobacco**
- **Not all staff feel well trained in relation to smoking in pregnancy for example:**
    - **Across the maternity services 25% of respondents reported that they had never been trained, as did 37% of antenatal staff, 64% medical professionals, 67% of sonographers, 69% of support workers, 57% of GP practice staff and 60% of children and family centre staff**
- **42% of health visiting staff appeared to have received training within the last year This was higher in South Warwickshire at 75%, compared to 45% in North Warwickshire and only 2% in Coventry**
- **Staff would value additional training with some Health Visitors and hospital midwives favouring additional face-to-face training, whilst junior doctors also felt motivational interviewing training would help**
- **All staff groups expressed a need for increased knowledge around e-cigarettes and NRT; less than 5% of staff had sufficient knowledge about NRT and only 3% of staff felt well confident to advise about e-cigarettes.**
- **Other staff groups expressed a need for training in relation to post-natal relapse and cannabis use in pregnancy**
- **The proportions of maternity staff trained to undertake CO monitoring ranged from 90% of those working in the community to 46% of antenatal staff and 48% of postnatal staff**
- **There was some indication from survey responses that all staff do not know all of the actions that should be taken when a CO value level is raised in a non-smoker**
- **There were mixed views among Health Visitors about the value of CO monitoring with some thinking it could prompt discussion of smoking, but the majority feeling it would be difficult to implement**
- **In terms of familiarity with the SSIP referral process while 70% of midwives said they were clear about the process this varied with 91% of community staff answering positively compared to 45% of antenatal and 47% of postnatal staff.**
- **72% of health visiting staff indicated that they knew the referral process**
- **Only 7% of GP practices staff said they would refer to the SSIP service**
- **Health visiting staff highlighted the issue that notifications they receive from midwifery generally do not report a woman's smoking status.**
- **In terms of barriers in dealing with smoking in pregnancy**

    - **Time constraints were the largest barrier for maternity staff (29%) and Health Visitors (29%), although this was less of a barrier for children and family centre staff (6%). Lack of training was the biggest barrier for children and family centre staff (28%), the second highest barrier for maternity staff (19%) and third highest for health visiting staff (13%),**
    - **Lack of knowledge about the referral process was a considerable barrier for both maternity staff in general (15%) and for health visiting staff (9%).**
    - **Junior doctors and hospital-midwives often assumed that community midwives would have made the referral earlier in pregnancy.**
    - **Concern about the future relationship with the patient was more of a barrier for health visiting staff (12%) than maternity staff (10%), although 18% of community midwifery staff felt this to be a barrier**
    - **Some midwives and Health Visitors questioned the ethics of referring women without their consent, which means they may not always refer them**
- **Staff identified specific areas for change including:**
    - **More investment is required in more socially deprived areas – specifically areas in Coventry and North Warwickshire**
    - **The complex issues affecting many women who smoke need to be recognised through the provision of additional support**
    - **A revised model of SSiP provision is needed with 'in maternity clinic support' and immediate access to NRT**
    - **More work is needed with partners/families through increase service capacity so advisors can work evenings and weekends.**
    - **GP practice staff discussed needing to know where and what services were available**
- **Staff identified where either they themselves could do more, or where other services and professional groups could play an enhanced role, suggestions included:**
    - **Schools, colleges, Looked After Children services and youth workers could all help tackle to tackle pre-pregnancy smoking**
    - **Sonographers using their limited involvement with women could reinforce messages about the risks of smoking**
    - **Children and family centre staff could use baby weigh-in clinic and antenatal and postnatal clinics to offer advice**
    - **GP practice staff using contraception appointments/family planning clinic, fertility discussions, smear tests, vaccination appointments and health checks as opportunities to discuss smoking**
- **Staff suggested a number of areas for improvement including:**
    - **clarifying staff roles and responsibilities and raising awareness of the SSiP service and the referral process**
    - **expanding the role of the maternity support worker within maternity services so they can provide specialist support to smokers**

- **increased risk perception capacity so the intervention can be delivered equitably in all Trusts,**
- **providing immediate access to NRT for pregnant smokers**
- **focusing cessation support on the wider household of the pregnant smoker**
- **providing additional visual resources including hard-hitting images or videos showing the risks of smoking in pregnancy**

14 Patient Engagement

Whilst patient engagement was not included in this review appendix 7 includes details of a brief survey undertaken by a UHCW obstetrician among smokers attending her clinic. The use of e-cigarettes during pregnancy was the specific focus of the survey. Whilst the sample is small (n=21) the findings indicate that 90% of respondents felt supported to quit smoking during pregnancy and had received enough information regarding their options, although they had continued to smoke.

Forty-three percent of respondents had prior experience of using an e-cigarette but only 14% used vaping as an alternative during pregnancy. Seventy-six percent of the respondents cited concerns regarding safety of e-cigarettes during pregnancy while 9.5% were unsure of implications of vaping during pregnancy. Sixty-seven percent of the respondents felt there was need for more information and guidance regarding the use of e-cigarettes during pregnancy.

Key Findings: Patient Engagement

- **Whilst 43% of pregnant smokers had used an e-cigarette prior to pregnancy only 14% used one as an alternative to smoking in pregnancy**
- **Seventy-six percent of the respondents cited concerns regarding safety of vaping during pregnancy**
- **Sixty-seven percent of the respondents felt there was need for more information and guidance in relation to e-cigarettes**

15 Findings: Corporate Assessments

In recognition of the fact that front-line staff can only deliver care consistent with national guidance if they are supported in doing so by their employing organisation, their commissioners and wider system 'corporate assessments' were undertaken using the CLeaR assessment framework. The CLeaR tool aligns standards into the following categories:

- Systems, leadership and networks
- Communications
- Training
- Treatments and interventions

Relevant standards from the CLeaR framework were incorporated into a 'corporate assessment' framework with additional 'standards' drawn from both the SBLCB and the recommendations of the Smoking in Pregnancy Challenge Group. These assessments were undertaken by the following stakeholders:

- The 3 maternity services
- The 2 SSiP services
- The LMS/CCG commissioners
- Local authority commissioners

15.1 Maternity Services Corporate Assessment

The frameworks were completed by individuals nominated by each organisation and the detail of the assessments is included in appendix 25 (UHCW), appendix 26 (UHCW PH48 compliance), appendix 27 (SWFT) appendix 28 (GEH). In summary for maternity services:

Trust wide standards: All Trusts have a smoke-free policy, but it is understood that the GEH policy is out of date. There is an LMS guideline that complements the smoke-free policies. However, all 3 sites have challenges with enforcing a smoke-free site.

Data collection: Current information systems at UHCW and GEH make validation of smoking in pregnancy data challenging. There is scope to do more, particularly within GEH.

Training: There is limited training provided to midwives at all 3 Trusts – in each case training is provided through the mandatory training programme. Maternity Support Workers are included at UHCW and GEH. This training is by necessity 'high level' and does not include sufficient time for staff to develop skills in delivering Very Brief Advice. There is no formal training provision for doctors or other professionals.

All community midwives have access to CO monitors and are trained in their use. Whilst other maternity departments and wards do have some access to monitors this is not universal and even where there are monitors their use is inconsistent.

Treatment: CO monitoring at booking is, or is becoming, established practice at all 3 Trusts. At SWFT repeat CO monitoring is undertaken at subsequent midwife appointments but at UHCW antenatal clinic staff are reportedly less likely to

undertake CO monitoring and at GEH there is evidence that CO monitoring at booking is not yet standard practice.

An ‘opt-out’ referral process is in place but inconsistent practice in terms of making a referral for all smokers has been identified at GEH. Paper referrals are still made by midwives at GEH (these are placed on the system by admin staff). UHCW have recently changed to an electronic referral system.

Feedback on referral is provided to maternity services (take-up or otherwise of the service).

There is scope for improved routine audit/monitoring of referrals and treatment within UHCW and GEH.

NICE guidance stipulates that NRT should be available throughout maternity services but there is little or no provision at the 3 Trusts (SWFT do provide NRT where indicated to women in receipt of the Risk Perception Intervention– but outside of this there is little if any prescribing of NRT)

There is a recognised need to review the information routinely provided to pregnant women – both in terms of content and format (recognising for example that women do not necessarily want more leaflets, but professionals are required to ensure women have received information in relation to key issues and have little alternative for universal use, other than leaflets). This is being looked at as part of the review.

Communication: There is a view that not all professionals are giving consistent messages – which undermines efforts to reduce SiP. There is also scope to improve the provision of information to those planning a pregnancy – pre-conception advice is recognised as a gap in provision.

There has not been any formal consultation of women who do not engage with SSiP services, although some limited enquiry has been made in relation to women’s understanding of vaping. This is included in the review report.

SBL Recommendations:
CO Testing: Whilst CO testing at booking is becoming established practice, there is more scope to ensure CO testing is offered more frequently across the antenatal pathway for women continuing to smoke. CO testing at 36-weeks is reported as standard practice at SWFT and UHCW but current estimates are that approximately 50% of women at GEH receive CO testing at 36 weeks. An audit of repeat CO measurement and the provision of information to non-smokers with a CO >=4ppm is due to be conducted in April 2020.

Referral to SSiP Service: The review indicates that access to specialist support, including provision of NRT, could be improved. The LMS guideline is now to only refer women with a reading of 4ppm or above at booking where they either admit to, or are thought to be, smokers.

Training: Whilst training in undertaking and interpreting CO measurement has been provided a significant number of staff report that they have not been trained. There

has not been widespread specific training to enable the development of skills to deliver VBA confidently – for example motivational interview training. Whilst smokers are being identified at booking staff express the wish for more training.

Comparative review: There is scope to further develop the review of adverse pregnancy outcomes and the contribution smoking makes to these. Opportunities do exist in terms of use of the Perinatal mortality review tool, but this is not currently used.

Smoking in Pregnancy Challenge Group: There are currently no Smoking in Pregnancy Champions

15.2 SSiP Services Corporate Assessments

The detail of the respective assessments for the Coventry and Warwickshire services are enclosed as appendix 29 (Warwickshire SSiP service) and appendix 30 (Coventry SSiP service). These show that in terms of Stop Smoking Interventions both services:

- Are commissioned to respond to referrals in less stringent timescales than NICE recommendations (ie make contact with a pregnant smoker within two days of receipt of the referral as opposed to one day, and make an appointment within two as opposed to one week of receipt)
- Make multiple attempts to contact those referred (in excess of the recommended three attempts)
- Provide a flexible service in terms of venue (home or community setting) to suit the needs of the woman

With respect to communication both services work to promote consistency of messages to all health professionals, women, their families and peers, but both face natural limitations in terms of their ability to do this. Neither service has well developed mechanisms to promote pre-conception messages to women or to support staff who provide pre-conception services. However, the Coventry service does have some scope to target young women who smoke through their work as part of the ’12 to 18’s service’ commissioned by Coventry Public Health and have working relationships with other providers such as Mamta, the iBumps service which support vulnerable young women.

Neither service is expected to engage with women who do not access the service following referral from a health care professional but would be keen to work with Public Health in doing so. The managers of both services are keen to participate in multi-agency approaches to supporting smoking cessation but report of limited opportunities to do so (for example a lack of opportunity to engage in wider tobacco control activities at a local level and lack of regional forums for sharing best practice, that used to exist.

15.3 Public Health Corporate Assessments

The completed Public Health corporate assessments are enclosed as appendix 31 (Coventry) and appendix 32 (Warwickshire). These show that plans are being developed to refresh Tobacco Control Plans for Coventry and Warwickshire, particularly in light of the updated national strategy and the NHS LTP commitment to enhance smoking cessation support.

There are recognised opportunities to strengthen smoking in pregnancy support through targeted work with higher risk communities/groups and through enhancing the contribution of services such as Health Visiting and Children and Family services.

There is also a recognised need to better understand the views of women who continue to smoke during pregnancy so these insights can inform future service delivery plans.

15.4 LMS Corporate Assessment

The completed LMS corporate assessment is enclosed as appendix 33. This shows that the LMS recognise the need to strengthen links between the smoking in pregnancy work programme and key decision-making groups within the LMS/Integrated Care System.

There are opportunities to strengthen work to reduce smoking in pregnancy, for example in relation to increasing opportunities to reduce smoking through pre-conception services.

There is also a recognised need to enhance administrative support to improve the efficiency of the work of the group taking plans forward.

Key Findings: Corporate Assessments

- **All Trusts have a smoke-free policy, but it is understood that the GEH policy is out of date. However, all three sites have challenges with enforcing a smoke-free site.**
- **Current information systems at UHCW and GEH make validation of smoking in pregnancy data challenging**
- **There is limited training provided to midwives at the three Trusts but for each training is provided through the mandatory training programme.**
- **There has not been widespread specific training to enable the development of skills to deliver VBA confidently – for example motivational interview training**
- **All community midwives have access to CO monitors and are trained in their use but in other clinical areas the use of CO monitors is inconsistent**
- **An 'opt-out' referral process is in place, but paper referrals are still made by midwives at GEH building in the potential for delay in referral**
- **There is little or no provision of NRT at the three Trusts, with the exception of SWFT where NRT is prescribed as part of the RPI**
- **There are currently no Smoking in Pregnancy Champions, as per the national Challenge Group recommendations**
- **SSiP services are commissioned to respond to referrals in less stringent timescales than NICE recommendations (ie make contact with a pregnant smoker within 2 days of receipt of the referral as opposed to one day, and make an appointment within 2 as opposed to one week of receipt)**
- **Coventry and Warwickshire Public Health departments are intending to refresh Tobacco Control Plans**
- **There are recognised opportunities to strengthen smoking in pregnancy support through targeted work with higher risk communities/groups and through enhancing the contribution of services such as Health Visiting and Children and Family services.**
- **The LMS recognises the need to strengthen links between the smoking in pregnancy work programme and key decision-making groups within the LMS/Integrated Care System**
- **There are opportunities to strengthen work to reduce smoking in pregnancy, for example in relation to increasing opportunities to reduce smoking through pre-conception services**

16 Conclusions

There was a good level of engagement from all services and clinicians throughout the review process and a good deal of consensus within the SiPT&F group in terms of the overriding issues that need to be addressed. Some of the key findings of the review include the following:

16.1 Scale of the Problem

Smoking in pregnancy has a profound impact on pregnancy outcomes for both mother and baby and places a significant potentially avoidable burden on services. Data analysed for this review indicates that:

- The stillbirth rate for smokers was 6.1 per 1,000 births, compared to a rate of 3.2 among non-smokers
- The proportion of preterm births was 15% among smokers, compared to 8% among non-smokers
- The proportion of LBW babies was 16% for smokers, compared to 7% among non-smokers

The impact of smoking reaches into childhood and beyond, continuing into the adult life of the child born to a smoker. Smoking drives health inequalities and failure to address smoking in pregnancy reinforces disadvantage across generations.

Smoking in pregnancy drives up the cost of maternity care and the cost of caring for neonates affected by it. For example:

- Estimates indicate that the cost of neonatal intensive care as a consequence of smoking in pregnancy is between £1m and £1.6m each year across Coventry and Warwickshire.
- The wider societal costs associated with an annual cohort of preterm babies due to smoking is estimated to be £3.4m between birth and 18 years.

On this basis the case for investing to reduce smoking in pregnancy cannot be ignored.

Smoking related risks are significantly reduced if smoking cessation is achieved by 15 weeks' gestation. However, women who smoke in pregnancy and particularly those that continue to smoke face many challenges such as homelessness, being victims of domestic violence and they can have other difficulties such as not speaking English or owning a phone, making communication difficult.

Women frequently face additional barriers to quitting smoking during pregnancy including household smoking (in particular partners smoking) and living within communities where smoking is a 'social norm'. Professionals also face barriers in encouraging smoking cessation including a lack of training and concerns over their relationship with the pregnant smoker.

16.2 Evidence for Interventions in Reducing Smoking

There is evidence that interventions to reduce smoking in pregnancy are both cost saving and cost effective[36]. A Cochrane review provides moderate to high quality evidence that psychosocial interventions increased the proportion of women who stopped smoking by 35%, and reduced admissions to neonatal intensive care by 22%[30].

Further to this a ‘whole system’ approach to improving smoking cessation rates (BabyClear) has demonstrated a two-fold increase in quitters[21]. The evidence indicates that success is more likely where there is:

- A maternity services clinical lead dedicated to reducing smoking
- High quality staff training to deliver VBA
- Close partnership working and effective pathways to smoking cessation support

A recent large-scale UK study[39] has also provided evidence that clinic-based support was associated with both increased rates of reach (setting a quit date) and effectiveness (abstinence rates) among pregnant smokers and another study[23] has demonstrated increased quit rates where specialist support is provided by maternity support workers and other maternity staff. This evidence should be useful in informing future models of service provision.

There is strong evidence for other interventions such as financial incentives combined with behavioural support being effective particularly for those in low socioeconomic groups, who typically engage less with stop smoking services.[25] In addition, there is a large-scale study underway assessing the impact of e-cigarettes on cessation rates and pregnancy outcomes[35]. Collectively these, together with emerging evidence around the value of self-help support[29] should inform future strategies to reduce smoking in pregnancy.

16.3 Epidemiology of Smoking in Pregnancy Across Coventry and Warwickshire

The review has provided a detailed picture of both smoking at booking and smoking at time of delivery. It is estimated that there are approximately 1549 smokers at booking each year across Coventry and Warwickshire although not all smokers are being identified at booking. It is clear that smoking is more common among younger women from more deprived socioeconomic circumstances and there is wide geographic variability, for example:

- At LSOA level the proportion of smokers ranges between 0% to 37%. In total across Coventry and Warwickshire there are 37 LSOAs with a proportion of smokers at booking greater then 25%

The higher risk communities are in Coventry and North Warwickshire, with smoking at booking in 2018/19 ranging from 9% for the SWCCG population, 13% for the CRCCG population and 17% for WNCCG

Smokers at booking are more likely to have co-morbidities, with 55% of smokers having one or more co-morbidity compared to 37% of non-smokers. Twenty-six percent of smokers are recorded as having a mental illness as compared to 13% of non-smokers and 13% are identified as having complex social care needs compared to 7% of non-smokers.

Of all of the smokers at booking it is estimated that approximately 365 quit each year, 24% of the total smokers (or 27% of those identified as smokers at booking). There is some evidence that those who do not quit smoking during pregnancy book for maternity care later, are less ethnically diverse and tend to have more co-morbidities. Over recent years there has on average been 1000 smokers at time of

delivery across Coventry and Warwickshire. The review findings confirm sustained and comparatively high smoking rates in North Warwickshire that are counter to the national downward trend.

16.4 Compliance with Guidance

A summary of the review findings in relation to compliance with NICE guidance PH26 and PH48 is provided in appendices 34 and 35, and adherence with SBL guidance is summarised in appendices 25, 27 and 28. In relation to maternity services key points to note include:

- Trusts in general are not fully implementing PH48 guidance, although more progress is being made at UHCW
- There is evidence of improving, but variable implementation PH26
- Evidence indicates that a high proportion of smokers identified at booking are being referred for specialist support
- An increasing proportion of women are CO tested at booking – 82% across all Trusts in 2018/19
- Maternity case note audits showed that 60% of women had a documented 36 week CO measurement at UHCW and GEH, as did 72% of women at SWFT
- The proportion of smokers at booking who had a repeat CO measurement (prior to 36 weeks) ranged from 29% of women at UHCW, 53% at GEH up to 94% at SWFT
- Generally, the evidence indicates that SWFT demonstrates higher performance in terms of compliance with guidance on a more consistent basis

For Health Visitor and FNP services there is evidence that smoking is addressed during initial visits and that advice in relation to household smoking is provided, although relatively few people are sign-posted to smoking cessation support. There is evidence that GPs and others in primary care make relatively few referrals and there is a generally low level of awareness about the specialist support available.

Thirty percent of survey respondents from children's centres/family hubs reported that they did not use brief advice opportunities to raise the issue of smoking in pregnancy. This is likely to be linked to the fact that 60% of the staff reported never having received relevant training.

16.5 Access to Specialist Support

Over the past two years there have been an average of 1386 referrals for specialist support while there has been an average of 1368 smokers identified at booking. Some of the referrals received by the SSiP services will have been repeat referrals and as such not all, but most likely a high proportion of smokers at booking are being referred.

Approximately 665 (48%) of those referred actually engage with the service and on average only 268 of those referred (19%) achieve a 4-week quit. Whilst not all of the smoking service quitters may sustain their quit status until delivery, if they did, they would account for 73% of the estimated 365 quits achieved between booking and delivery.

The review evidence indicates that there is considerable delay between maternity booking and access to face to face counselling/provision of NRT. The model of support includes a number of inefficiencies including a good deal of time spent by specialist advisers in attempting to contact the women referred. Following this, women can then face challenges in sourcing NRT as not all pharmacies stock all products. These challenges are likely to undermine quit attempts.

16.6 Staff Engagement Findings

Through both staff surveys (580 respondents) and discussion groups (228 participants) the following key findings emerged:

- A high proportion of staff believe that smoking in pregnancy is very important, but a relatively small proportion see it as important to their specific role
- Services and professionals tend to see maternity services as being responsible for tackling smoking in pregnancy, but within maternity services the responsibility is seen to lie with community midwives rather than with any other clinicians or midwives working in other clinical areas

In relation to training the following points are relevant:

- A high proportion of staff report that they do not feel adequately trained – particularly in relation to motivational interviewing skills
- 25% of maternity staff report not having been trained in relation to smoking in pregnancy and in particular junior doctors (64%), General Practice staff (57%) and sonographers (67%) lack any specific training
- 27% of maternity staff expressed a lack of confidence in tackling smoking in pregnancy and 31% of General Practice staff reported having insufficient knowledge around smoking in pregnancy
- The vast majority of staff feel inadequately trained in relation to advising on NRT and there is widespread misunderstanding about e-cigarettes

Staff from different service areas/professional groups identified similar barriers in tacking smoking in pregnancy including time constraints, lack of training, lack of knowledge about the referral process and concern about the ongoing relationship with the woman. These findings mirror national evidence in relation to barriers.

Staff identified specific areas for change including:

- More investment for socially deprived areas – specifically areas in Coventry and North Warwickshire
- The need for a revised model of SSiP provision with ‘in maternity clinic support’ and immediate access to NRT
- More work is needed with partners/families given the strong influence of household smoking on likely cessation
- The need to ‘cohort’ smokers within maternity services so that scarce specialist resources can be targeted on those who most need support

Staff also suggested a number of areas for improvement including:

- Clarifying staff roles and responsibilities and raising awareness of the SSiP service and the referral process
- Expanding the role of maternity support workers so they can provide specialist support to smokers

- Increase risk perception capacity so the intervention can be delivered equitably in all Trusts

Children centre/family hub staff identified opportunities where more support could be provided, for example through integrating support for smoking cessation/relapse prevention in baby clinics and some GP practice staff highlighted opportunities for pre-conception advice, such as during contraception related consultations and when undertaking cervical screening for example.

16.7 What Needs to Change

It is clear that the national 6% SATOD target will not be met for some years across Coventry and Warwickshire unless there is significant change. Failure to reduce smoking in pregnancy will mean that targets to reduce stillbirths and preterm deliveries are also likely to be unattainable. On the basis of the review findings, it is proposed that the key issues that need to be addressed include the following:

- An increased system wide focus on working with higher risk communities to reduce population smoking prevalence, particularly among young people, so that more women enter pregnancy smokefree, partners are less likely to smoke and social norms change such that smoking in pregnancy is recognised as having a damaging impact.
- A greater focus on pre-conception advice and smoking cessation support, with a family/household focus, so women are more supported in their quit attempts.
- Increased ownership of smoking in pregnancy across all professional groups/services and across all staff groups in all maternity service settings, so there is increased consistency in messaging in relation to the risks of smoking in pregnancy and the importance of quitting
- Mechanisms to ‘cohort’ smokers within maternity services need to be introduced so that specialist support and delivery of the Risk Perception Intervention can be provided efficiently
- A ‘levelling up’ of resources and support such that the systems and processes adopted in SWFT (where there is some dedicated Public Health and smoking cessation midwife time, and where there is a larger budget per birth) can be emulated in UHCW and GEH
- Increase in antenatal notifications from maternity staff to health visiting and FNP services, to include details of smoking status, SSiP referral and take-up
- Improved training for staff groups, but in particular improved training for midwives enabling them to be more confident in engaging women in challenging conversations
- A revised model of specialist support is required whereby women have more rapid access to specialist advice and NRT to enable their quit attempt

It is recognised that additional resources will be required to address the issues identified above together with the recommendations identified below. It is also acknowledged that there are many competing priorities for investment. However, in part, the anticipated investment in smoking cessation identified in the NHS Long Term Plan should offer some opportunity to secure improvements in the way that smoking in pregnancy is managed.

Whilst this investment could make a valuable contribution in reducing smoking rates the expectation is that more substantial investment would be required across the system to secure meaningful and sustainable change. If such change was achieved, it would generate very welcome longer-term system-wide savings and would reduce the morbidity and mortality burden associated with smoking in pregnancy.

17 Review Recommendations

These recommendations are informed by the findings of the review and reflect national evidence in terms of what works in reducing smoking in pregnancy. The recommendations are structured as follows:

- Key recommendations that provide a high-level summary of the priorities for change.
- Specific recommendation relating to identified stakeholders/services – outlining their contribution to the key recommendations.

More granular detail in terms of the specific actions required by respective partners is provided in appendix 36.

17.1 Key Recommendations

1. Develop an innovative and comprehensive Coventry and Warwickshire wide Tobacco Control Plan, that includes a focus on targeted activity with 'higher risk' communities. The plan should seek to promote smokefree homes and communities drawing on the contribution of a wide range of services and partner agencies. It should build on evidence of what works in reducing smoking in the general population and among higher risk groups.
2. Implementation of a systematic approach to smoking cessation within maternity services and across the local maternity system based on the evidence based 'BabyClear' approach – including dedicated leadership within maternity services, enhanced staff training and revised pathways including delivery of the Risk Perception Intervention.
3. Co-produce a new model for Specialist Smoking in Pregnancy Services, providing more rapid 'in clinic' access to specialist advice and NRT

17.2 Specific Recommendations

17.2.1 Relevant to LMS/System

1. In the context of wider LMS opportunities to address health inequalities and inequities in service provision strengthen the LMS role in relation to smoking in pregnancy promoting consistency across Trusts and the sharing of expertise. In particular to:
    - Constitute a smoking in pregnancy steering group with accountability to the LMS Board and through to the wider Health and Care Partnership Board
    - With Public Health support, lead development of a revised smoking in pregnancy service model (reflecting implementation of a 'BabyClear' approach)
    - The new model needs to be informed by the views of pregnant smokers – in particular those who do not currently access specialist support

- Working with CCGs develop a revised service specification for maternity services, addressing training needs and agreeing monitoring requirements.
- Working with maternity services to ensure staff training needs are identified and met

2. Work with CCGs in ensuring GPs refer pregnant smokers to SSiP services rather than to general cessation services
3. With CCG and Public Health colleagues organise smoking in pregnancy Protected Learning Time (PLT) event for staff working in primary care.
   For additional detail see note 1 in appendix 36.

17.2.2 Relevant to Maternity Services

1. Work through the LMS and with other partners to implement a revised model for smoking in pregnancy support, based on the evidence based BabyClear approach. To include:
   - Appointment of a smoking cessation lead midwife post within each Trust
   - A programme of training for all maternity staff to include skills in delivering VBA
   - An enhanced role in smoking in pregnancy for Maternity Support Workers
   - Rapid access to NRT (ie at booking clinics wherever possible)
   - Full implementation of NICE PH26, SBLCB and Smoking in Pregnancy Challenge Group guidance/recommendations.
   - Introduction of the Risk Perception Intervention (subject to business case approval) for GEH and UHCW and revise/enhance provision in SWFT

   For additional detail see note 2 in appendix 36.

2. Ensure smoking in pregnancy is a priority for ALL maternity staff in all clinical settings, working with the smoking cessation lead midwife to identify and support smoking in pregnancy champions, identifying and meeting training needs, so that all staff can undertake CO monitoring, deliver VBA and make electronic referrals to SSiP services.
3. Develop mechanisms to cohort smokers so that specialist support can be targeted on those with the greatest need of support
4. Ensure that the midwife notifications to Health Visitors from Trusts includes smoking status (non-smoker, quit in pregnancy, still smoking, referral to SSiP services), and that those still smoking should be highlighted as requiring an early antenatal contact
5. Ensure full compliance with SBL guidance in relation to smoking in pregnancy, including the provision of growth scans.
   For additional detail see note 3 in appendix 36.

17.2.3 Relevant to Specialist Smoking in Pregnancy Service

1. Working with PH commissioners and LMS partners seek to secure efficiencies in the SSiP model, improving timely access to specialist support, working to improve the skills of specialist advisors and working wherever possible with 3rd sector partners to improve the reach of pre-conception, antenatal and post-natal support to women and ‘higher risk‘ communities.

For additional detail see note 4 in appendix 36.

17.2.4 Relevant to HVs/FNP

1. Identify and train 'Smokefree Champions' as High Impact Area leads within Health Visitor and FNP services. In addition, identify locality level smoking in pregnancy champions to work across all service areas. Collectively these posts should ensure that:
    - All 0-5 Public Health Nursing Staff (HVs, community nursery nurses, FNP staff) are trained and competent to use motivational interviewing techniques to deliver brief advice for smoking cessation

    All staff should then promote an increase in the use of universal contacts to:
    - Provide smoking cessation advice and make referral to SSiP services for pregnant smokers
    - Provide advice and support on relapse prevention among women who quit smoking in pregnancy
    - Enhance the sign-posting of partner/household smokers to mainstream smoking cessation support
    - Promote relapse prevention among pregnant women who quit smoking
    - Continue to promote smokefree homes and cars.

    For additional detail see note 5 in appendix 36.

2. Working with commissioners consider the introduction of targeted CO monitoring to aid the identification and management of smokers within Health Visitor services.

3. Improve recording/documentation of smoking and working with PH commissioners and wider LMS partners agree enhanced monitoring requirements so the longer-term impacts of smoking in pregnancy can be evidenced.
   For additional detail see note 6 in appendix 36.

17.2.5 Relevant to Public Health

1. Spearhead a system-wide commitment to achieving a 'smoke free generation' raising the profile of smoking with Health and Wellbeing Boards, the Health and Care Partnership and other partners**,** securing investment that will deliver a saving to the system.
   For additional detail see note 7 in appendix 36.

2. In relation to wider population smoking- lead development of comprehensive Tobacco Control Plans (or a joint TCP) for Coventry and Warwickshire, working with all partners to support a reduction in population smoking, particularly in 'higher risk' communities, using innovative techniques and incentives as appropriate. This should include full implementation of PH guidance (PH48 (NHS Trusts), PH23 (Young People), PH14 (Preventing uptake) and PH 26 (Smoking in Pregnancy) and opportunities for pre-conception smoking cessation support. The TCP should be supported with a population wide communications campaign
   For additional detail see note 8 in appendix 36.

3. In relation to smoking in pregnancy– consider the role of innovative and/or evidence-based approaches – including incentives and the contribution that wider partners can make to reduce smoking in pregnancy, particularly among ‘higher risk’ communities. Additionally, enhance the contribution of all PH commissioned services, in particular HVs and Children and Family Centres/Family Hubs and work with SSiP services to revise service specifications as appropriate. For additional detail see note 9 in appendix 36.

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Glossary

Term	Meaning
[illegible]	[illegible] smoking 4 weeks before the date but must not smoke ('not a single puff') in the 2 weeks before the quit date
Antenatal	Before birth; (during or relating to pregnancy)
[illegible]	[illegible] (kilograms) by height (metres) squared
CCG	Clinical Commissioning Group – responsible for the planning and commissioning of health care services
CLeaR	Framework of standards intended to promote excellence in local tobacco control
[illegible]	[illegible]
CO	Carbon Monoxide – a colourless, odourless highly poisonous gas found in tobacco smoke (used for biochemical verification of abstinence).
[illegible]	[illegible] another condition in the same person at the same time
Complex social care	Includes women aged under 20, those who experience domestic abuse, recent migrants, asylum seekers or refugees, have difficulty reading or speaking English or women who misuse substances including alcohol
CURE	A comprehensive secondary care treatment programme for tobacco addiction
Deprivation Decile	Based on IMD. Decile one represents the most deprived and decile 10 represents the least deprived. Those living in the most deprived decile are, therefore, living in the most deprived 10% of the population
FNP	Family Nurse Partnership - a home visiting programme for first-time young mums and families
Gestation	The length of time the woman has been pregnant. Initially calculated from the first day of last menstrual period,
IMD	Index of Multiple Deprivation - an overall measure of the deprivation experienced by people living in an area

	and future health and care needs of local populations
LBW	Low Birth Weight - recorded birth weight under 2500g
LMS	Local Maternity System- partnership to transform maternity services, improving outcomes
LSOA	Lower Super Output Area – geographical area with a minimum population of 1000 (the mean is 1500)
NBV	New Born Visit - a new baby review within 10 to 14 days of the birth.
NCSCT	National Centre for Smoking Cessation and Training
NIC	Neonatal Intensive Care – intensive life support for the new born
NRT	Nicotine Replacement Therapy- medication containing nicotine intended to promote smoking cessation
Postnatal	Relating to the period after childbirth
Preterm	Baby born before 37 weeks' gestation
RPI	Risk Perception Intervention - a 'hard hitting' intervention enabling the mother to fully appreciate the risks associated with smoking in pregnancy
SATOD	Smoking at Time of Delivery
SBL	Saving Babies' Lives - designed to tackle stillbirth and early neonatal death. Combines elements of care that are evidence-based and/or best practice:
SSiP	Specialist Smoking in Pregnancy (service)
Stillbirth	Birth of an infant that has died in the womb (after having survived at least the first 28 weeks of pregnancy)
VBA	Very Brief Advice -simple advice given opportunistically in almost any consultation with a smoker (or in relation to any other health related behaviour where change is required)

Appendix 1 Specification for the Smoking in Pregnancy Review

Background:

1. Picture in Warwickshire

1.1 The national smoking cessation *target* for pregnant smokers is 6% (SATOD) by 2021/22. Warwickshire has made a further commitment to reduce the rate to 5.0% by 2022/23.

1.2 Whilst performing better than national (10.8%) and statistical neighbours (11.7%), Warwickshire did not meet the SATOD target for 2017/18 (actual 10.1%, target 9.1%). Note: awaiting 2018/19 SATOD data).

1.3 48% of the total number of referrals to the Warwickshire Stop Smoking in Pregnancy service (i.e. those women with a CO positive result) over the last 3 yrs. come from the north of Warwickshire. This compares to 36% in South Warks and 16% in Rugby.

1.4 There is a need to reduce the drop-off between referrals to, and take-up of the SSiP service. This is most noticeable in Nuneaton & Bedworth and Rugby areas, where only 38.8% and 38.6% respectively take-up the service.

1.5 There are a number of factors contributing to this drop-off. First, local social norms relating to smoking and the need to effectively challenge these norms (particularly relating to smoking in pregnancy) at a place-based level. Second, insufficient Risk Perception intervention capacity within GEH and UHCW-Rugby maternity services. Third, time pressures during antenatal booking interactions, which impact on the quality of SSiP brief advice.

1.6 Attrition from the time of referral to SSiP, to successfully smoking cessation is a concern. In the last three years, the proportion of smoking women in Rugby (14.3%), Nuneaton & Bedworth (15.7%) and North Warks (16.1%) referred to the SSiP who succeed in quitting are lower than desired. This compares to Stratford (23.9%) and Warwick (20.8%) areas.

2. Picture in Coventry

- 2017/18 data shows that whilst performing better than statistical neighbours (13.1%) the average SATOD rate for Coventry was 11.8% which is higher than the England average (10.8%)and have not met the national smoking at time of delivery target.
- Family Hub areas such as Woodside (Willenhall) and Park Edge (Bellgreen) appear to have higher percentages of smoking at time of delivery for Quarter 4 2018/19.
- In Q 4 18/19 the percentage of service users who accessed the stop smoking in pregnancy service in Coventry, set a Quit Date and successfully quit at 4 weeks was 38%. (87 % had their smoking status was verified using CO spirometry).

The LMS context

At the LMS SSiP task & Finish Group meeting on 1 May 2019, concerns were raised regarding a lack of capacity within maternity services to be able to fully implement the new local SSiP guidelines (currently in draft), this was a particular concern within GEH maternity services.

Business Requirement:

To recruit strategic expert / organisation to lead on a phase 1 strategic and operational scoping, needs assessment and benchmarking of stop smoking support across the Warwickshire & Coventry Local Maternity System.

This expert will be:

- Directly accountable to the LMS Health & Wellbeing Work-stream Group

- Expected to work in very close partnership with the LMS Smoking in Pregnancy Task & Finish group and its expert membership.
- Expected to work closely with both Cov & Warks Public Health and Data Insights experts in relation to SSiP data capture and analysis.

Objectives / Outcomes:

Phase 1 Appraisal and scoping of stop smoking support across Cov & Warks LMS

Needs assessment & scoping

- Utilise existing relevant national and local policy, guidelines and evidence, together with local literature, mapping assessment and research reports.
- Engage all relevant local stakeholders (midwives, obstetricians, other Trust staff, Health Visitors, GPs and Public Health and other partners/partner organisations as appropriate)
- Working through the LMS Smoking in Pregnancy Task & Finish group undertake the following:
    - Undertake an epidemiological assessment of smoking (at booking, during pregnancy and at time of delivery)
    - Benchmark LMS smoking rates against statistical neighbours and nationally
    - Process mapping of stop smoking in pregnancy (SSiP) support pathways, data systems processes, recording and reporting (including relapse prevention) across each of the maternity services/locations:
        - Coventry,
        - North of Warwickshire,
        - Rugby,
        - South Warwickshire
    - Audit to benchmark SSiP provision against new guidelines/evidence (source SSiP audit and pathways mapping tools from other LMS best-practice areas)
    - Use national data to assess the effectiveness of local SSiP services – comparing with statistical neighbours where possible
    - Examine differences in SSiP delivery models (in-hospital and community) and compare to best practice models/evidence
    - Undertake detailed data analysis (cross-systems and place-based) to develop insights into locations/communities with greater need, gaps and scope potential assets
    - Examine equipment availability and maintenance, training for staff in use of equipment and resource allocations across the LMS
    - Gather information on training provision, up-take, gaps and levels of confidence amongst key frontline staff in identifying smokers, undertaking risk assessment, delivery of VBA/motivational interviewing, advising on e-cigarettes and making referrals
    - Review communications around Smoking in Pregnancy – to the population in general, to pregnant women and to professionals (including use of all relevant media)
    - In context of the above
- Identify LMS SSiP priorities and next steps – sustainable solutions
- Take an asset-based approach in considering targeted, place-based, multi-agency, tailored SSiP support
- Examine the role and promotion of e-cigarettes as part of a future SSiP approach.

Appraisal and planning

- Present a series of recommendations to the LMS Board for consideration
- Quantify and identify resource/costings required for phase 2

- Agree priorities, action plan and membership to oversee work. Note: maternity services capacity and resource will determine prioritisation.

Phase 2: Implementing SSiP delivery enhancement *(outside scope of this business care)*

- Stakeholder analysis and the setting up of a multi-agency SSiP implementation/steering group
- Implementation of identified priority activities
- Robust monitoring and evaluation.

Costs and Funding:

Total funding allocation for strategic expert / organisation to lead on a phase 1:
Cost = **£50K** over 6 months
Additional 2019-20 funds available for training and materials **= £34K.**
Note: use of these funds to be informed by the above Phase 1 scoping exercise, and to be agreed by LMS SSiP Health & Wellbeing Work-stream Group.

- To increase numbers of women who take-up SSiP services
- To reduce numbers of women smoking in pregnancy across Warwickshire and Coventry
- To meet national smoking cessation *target* for pregnant smokers - 6% (SATOD) by 2021/22
- Contribute to challenging social norms of smoking in areas with higher smoking rates

Risks:

- Insufficient capacity and resource within maternity units to implement SSiP guidelines and Phase 2 priority work.

Key Milestones / Time Scales**:**

The below is a draft timeline:

- July 2019: confirmation of funding
- August 2019: expert / organisation identified to lead on a phase 1
- September 2019: Needs assessment and scoping work to begin
- March 2020: Scoping and Phase 2 appraisal work to be completed
- By March 2020: training and resource funding allocation to be completed
- April 2020: Phase 2 to begin

Appendix 2 Estimating the Costs of Smoking in Pregnancy

This analysis is restricted to estimating the impact of smoking on the annual number of preterm births across Coventry and Warwickshire and uses national data sources /published data to estimate Neonatal Intensive Care (NIC) costs (based on estimated cot/bed days required by babies born to mothers who smoke).

This analysis will produce an under-estimate of smoking related NIC costs as there will also be full-term babies (ie babies born after 37 weeks gestation) who will have a low birth weight as a consequence of smoking and who will also need specialist support for a period of time. They are not accounted for in this analysis.

The ONS Birth Characteristics data set 2018[1] indicates that 7.8% of all births across England and Wales were preterm. For the West Midlands 8.7% of births were preterm[2]. The data set does not provide information at a Local Authority level and so for Coventry and Warwickshire the England and Wales preterm birth rate has been applied to local births.

The 2016 ONS data set 'Live births by mothers' usual area of residence' reports that there were 10,482 live births across Coventry and Warwickshire.

The proportion of all preterm births attributable to smoking has been estimated to range from 5.3 to 7.8% (in a population where the prevalence of SiP was 11.5%)[3]. Thus, for this analysis it is assumed that 6.5% of all preterm births could reasonably be estimated to occur as a consequence of smoking in pregnancy.

On this basis it is estimated that there would be **818 preterm births** (babies born before 37 weeks gestation) across Coventry and Warwickshire, and that of these births **53 (6.5%) were due to SiP**.

The number of Coventry and Warwickshire preterm births by gestational age was estimated by using the national profile as indicated in the ONS Birth Characteristics data set 2018[1]. Table 1a shows the national profile of preterm births by gestation applied to the estimated number of preterm births across Coventry and Warwickshire.

Table 1a. Estimated Number of Preterm Births by Gestation Across Coventry and Warwickshire.

Gestation at birth	Proportion of all preterm births (England and Wales)	Applied to estimated Number of C&W preterm births (n=53)
Less than 24 weeks	0.9%	0.5 baby
24 to 27 weeks	4.16%	2.2 babies
28 to 31 weeks	9.95%	5.3 babies
32 to 36 weeks	84.9%	45 babies
Total		**53 babies**

National data on NIC length of stay by gestational age[4] was applied to the number of C&W preterm births as shown in Table 2a.

Table 2a. Estimated Number of NIC Cot Days for Preterm Births Due to Smoking

Gestation at birth	Average number of cot days	Applied to estimated Number of C&W preterm births (n=53)	Estimated annual cot days[4]
Less than 24 weeks	92 days	0.5 baby	46 days
24 to 27 weeks	92 days	2.2 babies	202 days
28 to 31 weeks	44 days	5.3 babies	233 days
32 to 36 weeks	12 days	45 babies	540 days
Total		**53 babies**	**1021 days**

The cost of an NIC cot day was estimated to be £1,000 based on national cost data (the range of cot day costs is from £493 (special care with external carer) to £1531 (intensive care))[5]. On this basis **the annual NIC cost attributable to preterm births caused by smoking is estimated to be £1,021,000.**

1. ONS Birth Characteristics data set 2018 (Table 8)
2. ONS Birth Characteristics data set 2018[1](Table 9)
3. Infant Morbidity and Mortality Attributable to Prenatal Smoking in the U.S. Patricia M. Dietz, Dr PH, Lucinda J. England, MD et al. American Journal of Preventive Medicine 2010;39(1)45–52
4. BLISS Statistics 2016 (https://www.bliss.org.uk/research-campaigns/campaigns/neonatal-care-statistics/statistics-about-neonatal-care)
5. National Cost Collection data. National Cost Collection: National Schedule of NHS costs - Year 2018-19 - NHS Trust and NHS foundation Trusts (https://improvement.nhs.uk/resources/national-cost-collection/#ncc1819)

Appendix 3: SBLCB Process Indicators

- Recording of CO reading for each pregnant women on Maternity Information System and inclusion of these data in the providers MSDS submission to NHS Digital
- % of women where CO measurement at booking is recorded
- % of women where CO measurement at 36 weeks is recorded Outcome Indicators:
- % of women with a CO measurement > 4ppm at booking
- % of women with a CO measurement > 4ppm at 36 weeks
- % of women who have a CO level > 4ppm at booking and < 4ppm at the 36-week appointment

Appendix 4 Standard Treatment Programme for Pregnant Women

The NCSCT Standard Treatment Programme for Pregnant Women describes the components of a structured individual face-to-face smoking cessation intervention with a pregnant woman who smokes. The programme reflects the latest evidence in terms of how best to support women during pregnancy with quitting and maintaining cessation during the post-partum period, acknowledging the special considerations that may affect a pregnant woman's motivation and ability to quit smoking.
Delivery of the programme calls on practitioners to use a range of communication skills that will:

- Boost motivation and self-efficacy
- Use reflective listening
- Build rapport
- Provide reassurance

The standard programme consists of 6 face to face appointments, however pregnant women often require a more flexible approach and longer periods of support than the general population of smokers. As such, the timing and number of sessions are often adapted to the individual needs of the pregnant woman.

Pre-quit assessment
This session also covers general preparations for quitting and it should aim to enhance motivation and boost self-confidence throughout.

1. Learn about the pregnancy and assess current readiness to quit
2. Assess current and past smoking
3. Assess physiological and mental functioning
4. Discuss importance of quitting with support and inform about the treatment programme
5. Establish understanding of how smoking affects pregnancy
6. Explain and conduct CO monitoring
7. Establish personal reasons for quitting and confidence in ability to quit
8. Discuss smoking contacts and available support
9. Assess past quit attempts
10. Explain how tobacco dependence develops and assess nicotine addiction
11. Explain the importance of abrupt cessation and the 'not a puff' rule
12. Inform about withdrawal symptoms
13. Discuss the use of nicotine replacement therapy and electronic cigarette
14. Set a Quit Date
15. Prompt and elicit commitment
16. Discuss preparations and provide a summary

Quit Date
This session also covers strategies for avoiding smoking and should aim to enhance motivation and boost self-confidence throughout.

1. Check on how pregnancy is progressing
2. Confirm readiness and ability to quit
3. Confirm availability of NRT or e-cigarette supplies and discuss expectations of products
4. Discuss withdrawal symptoms and cravings / urges to smoke and how to deal with them
5. Advise on changing routines
6. Discuss who will be able to offer support during quit attempt
7. Revisit smoking contacts and available supports
8. Address any potential high-risk situations in the coming week
9. Conduct CO monitoring

10. Confirm the importance of abrupt cessation
11. Prompt commitment
12. Discuss plans and provide a summary

Session 3, 4, 5: Weekly post Quit Date
These sessions also covers strategies for avoiding smoking and it should aim to enhance motivation and boost self-confidence throughout.

1. Check on progress
2. Measure CO levels
3. Enquire about NRT or e-cigarette use and ensure sufficient supply
4. Discuss any withdrawal symptoms and cravings / urges to smoke and how to deal with them
5. Discuss any difficult situations experienced and methods of coping
6. Address any potential high-risk situations in the coming week
7. Confirm the importance of the 'not a puff' rule and prompt commitment
8. Provide a summary

4 weeks post Quit Date (4-week follow-up appointment)
This session also covers strategies for avoiding smoking in the long term and it should aim to enhance motivation, boost self-confidence and promote the ex-smoker identity throughout.

1. Check on progress
2. Measure CO levels
3. Advise about continued NRT or e-cigarette use and where to obtain further supplies
4. Discuss cravings / urges to smoke that the woman has experienced and how she can deal with them in the future
5. Discuss any difficult situations experienced and methods of coping and address any potential high-risk situations in the future
6. Assess risk of relapse, provide motivation and support
7. Assess woman's individual needs for ongoing and agree to plan for follow-up support and/or next appointment
8. Confirm the importance of the 'not a puff' rule and prompt commitment
9. Provide a summary

Appendix 5 Rapid Review of Evidence for Smoking in Pregnancy

Purpose of the Review

To give a summary of the best models for smoking cessation in pregnancy. To help identify additional solutions to, those provided in the most recent NICE guidance on Smoking in Pregnancy. The report includes abstract summaries and provisional recommendations which will form part of the recommendations of the Smoking in Pregnancy Review.

Scope

All feasible care models and interventions will be considered. The key focus is on research which: a) published since the release of the NICE guidance in 2013 and, b) features effective methods of increasing Stop Smoking Services referral rates c) features methods for increased smoking cessation rates d) addresses health inequalities

Publication types Considered

Systematic reviews, RCTs, qualitative research, NHS reports, grey literature (e.g. service evaluations) from other regions, research protocols

Databases

Google Scholar, Cochrane library, NICE evidence library, PubMed, PsychInfo

Search Topics

Smoking cessation, smoking in pregnancy, smoking cessation UK, behaviour change interventions for smoking, effectiveness of incentives for smoking cessation, stop smoking services engagement, increasing referrals to stop smoking services, barriers and facilitators to accessing smoking cessation services, use of e-cigarettes by pregnant smokers, use of NRT versus e-cigarettes. Smoking and health inequalities.

Prioritisation criteria

- Published since 2013 (the date of the most relevant NICE guidance) favouring more recent research where possible
- Relates to the UK health and social care system
- Includes insights and recommendations not already included and/or highlighted in NICE guidance
- Focuses on practical implementation of a programme or model
- Contributes practicable solutions in the Coventry and Warwickshire context
- Provides insight on methods of increasing referral rates to smoking cessation services

Exclusion criteria

- Models or methods which are unlikely to be adopted due problems with affordability, practicability, effectiveness/cost-effectiveness, acceptability, side effects (or safety) or equity.
- Models which have likely been superseded by the NICE guidance

Overview

Smoking in pregnancy is an important public health issue because of the risk it poses to child foetal development and maternal health. A comprehensive solution will likely entail a whole system, multi-level approach to ensure an increase of quit rate at time of delivery. While generally the trend in Coventry and Warwickshire has been towards a reduction in rates of pregnant smokers, the region as lagged the rest of the country in recent years.

This rapid literature review looks at research papers, reports, and systematic

reviews, and focuses on which measures were found to be most effective in reducing numbers of pregnant smokers. The review includes research summaries and recommendations which aim to: 1. Enable systemwide engagement from the patient, to workforce, to organisational levels; 2. Increase successful referrals of pregnant smokers to stop smoking services, in both an opt-in and opt-out context 3. Increase the number of pregnant smokers who have quit by date of delivery 4. Provide important context as well as viable approaches for underserved pregnant smokers for whom typical care has not worked. In addition to the review, we have included a horizon scan section which highlights research, policy development, and upcoming products which are not yet published, approved or widely available, but which may prove useful in future Smoking in pregnancy strategy development.

Executive Summary of Key Findings

- In the BabyClear multi-level complex intervention, healthcare workers very much valued being trained on how to approach patients about smoking during pregnancy, without damaging their relationship with them. The intervention was considered successful in achieving behaviour change in patients because it standardised support provision, and facilitated reorganisation of the healthcare system. Another key component in this success was staff belief in the intervention, and commitment across staff groups.
- The BabyClear intervention successfully doubled successful referral to stop smoking services and significantly increase quit rate by time of delivery. This intervention was found to be cost effective at the health system level this economic modelling demonstrated that cessation rates can be doubled at an additional cost of £31 per delivery It included skills training in smoking cessation support for hospital Trust and stop smoking services workers. It also included measures to ensure the provision of CO monitors and supporting materials (e.g. disposable mouth pieces) and the creation of an explicit referral pathway for pregnant smokers
- In another complex intervention programme in Wales, providing additional maternity support staff workers, who deliver a flexible bespoke intervention for pregnant smokers, led to a higher proportion of them engaging with Stop Smoking Services
- Equity-orientated stop-smoking support provided in the primary care context can compensate for lower quit rates among disadvantaged smokers. Achieved through tailored interventions, targeted services, and an equity-based performance targets for GP practices
- There is strong evidence of financial incentives combined with behavioural support being significantly more effective in improving cessation programme engagement and increasing quit rates when compared to usual care. This is true both of smokers in general and pregnant smokers and may be particularly effective for those in low socioeconomic status groups, who typically engage less with stop smoking services.vi This intervention was found to be cost effective at the health system level.
- Barriers such as- a lack of understanding of what a stop smoking service actually offers, and a lack of confidence in how well the service would work for them- can stop smokers from engaging with stop smoking services. While a recommendation of the service by a health care professional was identified as being a facilitator to engagement with the stop smoking services.

- While little is known about the long-term effects of e-cigarettes on both pregnant smokers and smokers in general, current evidence suggests that harm is significantly reduced when compared to smoking. Though evidence is mixed, one recent RCT suggests that e-cigarettes are more effective for smoking cessation when compared to NRT among smokers in general. An RCT comparing the efficacy of e-cigarettes and NRT among pregnant smokers is currently ongoing.

PAPER ONE

What helped and hindered implementation of an intervention package to reduce smoking in pregnancy: process evaluation guided by normalization process theory[1]

Intervention: BabyClear

Background

Smoking in pregnancy causes harm to mother and baby. Despite evidence from trials of what helps women quit, implementation in the real world has been hard to achieve. An evidence-based intervention, babyClear, involving staff training, universal CO monitoring, opt-out referral to smoking cessation services, enhanced follow-up protocols and a risk perception tool was introduced across North East England. This paper presents the results of the qualitative analyses, reporting acceptability of the system changes to staff, as well as aids and hindrances to implementation and normalization of this complex intervention.

Methods

Process evaluation was used to complement an effectiveness study. Interviews with maternity and smoking cessation services staff and observations of training were undertaken. Normalization Process Theory (NPT) was used to frame the interview guides and analysis. NPT is an empirically derived theory, developed by sociologists, that uses four concepts to understand the process of routinising new practices.

Results

Staff interviews took place across eight National Health Service Trusts at a time of widespread restructuring in smoking cessation services. Principally interviewees worked in maternity (n = 63) and smoking cessation services (n = 35). Five main themes, identified inductively, influenced the implementation: 1) initial preparedness of the organisations 2) staff training; 3) managing partnership working; 4) resources; 5) review and planning for sustainability.

Conclusions

NPT was used to show that the babyClear package was acceptable to staff in a ra nge of organisations. Illustrated in Themes 1, 2 & 3, staff welcomed ways to approach pregnant women about their smoking, without damaging their professional relationship with them. Predicated on producing individual behaviour change in women, the intervention does this largely through reorganising and standardising healthcare systems that are required to implement best practice guidelines. Changing organisational systems requires belief and commitment from staff, so that they set up and maintain practical adjustments to their practice and are reflective about adapting themselves and the work context as new challenges are encountered. The ongoing challenge is to identify and maintain the elements of the

intervention package which are essential for its effectiveness and how to tailor them to local circumstances and resources without compromising its core ingredients.

Strengths of this research

This qualitative study gives a good practical insight into what works when implementing a complex intervention like BabyClear, from the perspective of those responsible for implementation. Use of a formal theory likely helped the researchers both to structure their data collection and to make meaning of their findings in the final analysis. If the findings here are applied in the Warwickshire and Coventry context it may help to pre-empt challenges, for example ensuring due consideration is given to increasing staff commitment to an intervention, and guide prioritisation, for example ensuring mechanisms of standardisation throughout the system. As this research suggests that the BabyClear intervention was generally considered acceptable, it helps increase confidence that this, or a similar intervention, would be acceptable in our context.

Limitations of this research

Qualitative research of this kind must be generalised to different contexts with caution, while the insights generate are useful they are also derived from a relatively small sample, are therefore likely more vulnerable to bias, and may not apply directly in the Warwickshire and Coventry context. The research does not include interviews from across the whole system, for example commissioners, Trust leads, and patients, as such there may be some important factors which would help and hinder implementation omitted.

Suggested Use

The findings of this research could be used to inform implementation planning and current service reviews in the Warwickshire and Coventry context. The methods and theory used may also help inform the scoping of future intervention programme development in our area.

PAPER TWO

Evaluation of a complex healthcare intervention to increase smoking cessation in pregnant women: interrupted time series analysis with economic evaluation[2]

Intervention: BabyClear

Objectives

To evaluate the effectiveness of a complex intervention to improve referral and treatment of pregnant smokers in routine practice, and to assess the incremental costs to the National Health Service (NHS) per additional woman quitting smoking.

Design

Interrupted time series analysis of routine data before and after introducing the intervention, within-study economic evaluation.

Setting

Eight acute NHS hospital Trusts and 12 local authority areas in North East England.

Participants

37 726 records of singleton delivery including 10 594 to mothers classified as smoking during pregnancy.

Interventions

A package of measures implemented in Trusts and smoking cessation services, aimed at increasing the proportion of pregnant smokers quitting during pregnancy, comprising skills training for healthcare and smoking cessation staff; universal CO monitoring with routine opt-out referral for smoking cessation support; provision of CO monitors and supporting materials; and an explicit referral pathway and follow-up protocol.

Main outcome measures

Referrals to smoking cessation services; probability of quitting smoking during pregnancy; additional costs to health services; incremental cost per additional woman quitting.

Results

After introduction of the intervention, the referral rate increased more than twofold (incidence rate ratio=2.47, 95% CI 2.16 to 2.81) and the probability of quitting by delivery increased (adjusted OR=1.81, 95% CI 1.54 to 2.12). The additional cost per delivery was £31 and the incremental cost per additional quit was £952; 31 pregnant women needed to be treated for each additional quitter.

Conclusions

The implementation of a system-wide complex healthcare intervention was associated with significant increase in rates of quitting by delivery. It is likely to be cost effective from a healthcare perspective.

Strengths of this research

The intervention is associated with significant changes in both referrals to smoking cessation services and increased odds of quitting by date of delivery. The quantitative nature of this research means that the results are more likely to be generalisable than qualitative research. There is a good sample size of over 10k pregnant smokers which strengthens the power of the study and thus our confidence in the findings. The paper provides a good description of the intervention elements improving potential for adequate replication (please see supplementary materials). The inclusion of an economic evaluation improves transparency on the value of the intervention to the health and social care system. As the cost is from the healthcare perspective rather than say the individual smoker or societal perspective, it is gives an indication of the BabyClear intervention's costs and potential value to hospital Trusts specifically. The intervention was rolled out in the NHS England context which increases the likelihood that could be applied in the Warwickshire and Coventry context.

Limitations of this research

This trial is an interrupted time series, or "before and after" trial, as opposed to a gold standard randomised controlled trial, for this reason causal inference is limited. This means that due to limitations in this study design, we can only infer that there is an association between the introduction of the BabyClear intervention and an increase in referral rates, and increased odds of patients having quit by time of delivery. Furthermore, as the quit status at time of delivery is observed via self-report rather than an objective measure such as CO testing. There may be some confounding factors not accounted for which have led to the changes in referrals and quit status at time of delivery. Pregnant smokers of lower socio-economic status were less likely to have benefited from this intervention, meaning the intervention implemented on its own may not be equitable. While the intervention is well detailed, it is not clear which elements of the intervention are the active ingredients, i.e. which aspects of the intervention are necessary to achieve the better outcomes. The inclusion of a "risk perception" element, typically included in the BabyClear intervention package, was

excluded from evaluation meaning there is no evidence either way with regards to this. The costs pertain to 2013/14 and therefore may not be representative of current costs.

Suggested Use

This intervention could be compared to the current Warwickshire and Coventry approach and used optimise current delivery and identify opportunities service improvement. The economic analysis could help detail the potential cost and value of an intervention of this type or be used as a benchmark.

PAPER THREE

Models for Access to Maternal Smoking Cessation Support: a quasi-experiment to increase the engagement of pregnant women who smoke in National Health Service stop smoking services [3]

Intervention: MAMSCS Wales

Background

Maternal smoking is a key cause of poor health outcomes. In Wales, a third of pregnant women smoke before or during pregnancy, the highest prevalence of maternal smoking in the UK. Supporting women to stop smoking during pregnancy is a challenging area of public health. Models for Access to Maternal Smoking Cessation Support (MAMSS) aimed to examine the effectiveness of smoking cessation in pregnancy services delivered by specially trained practitioners.

Methods

A non-randomised, quasi-experiment was undertaken across four Health Boards in Wales to assess the effectiveness of new models of service designed to increase the engagement of pregnant women in National Health Service (NHS) stop smoking services. Qualitative approaches were adopted to capture important contextual information and consider multiple perspectives. A flexible, bespoke intervention was offered to pregnant women in intervention sites (delivered by a specialist maternity support worker, a specialist midwife, or a specialist Stop Smoking Wales pregnancy adviser) and compared with usual care delivered by the national stop smoking service. Routine data were collected from maternity records and the NHS Stop Smoking Wales service. The primary outcome was the proportion of smokers who engaged with the service. Power calculations showed that 1168 pregnant smokers were required to detect a 15% difference in the proportion of pregnant smokers engaged with smoking cessation services (5% type I error rate and 90% power).

Findings

2756 women were identified by midwifery staff as pregnant smokers (978 in intervention and 1778 in control sites). The proportion of smokers who engaged with the service was significantly higher across intervention sites than control sites. The highest proportion was observed in Health Board area 3, which employed a maternity support worker to support women to quit smoking, where 64 of 181 pregnant smokers (35%, 95% CI 29–43) set a quit date and attended at least one treatment session compared with just two of 227 in usual care (1%, 0–3). This model cost about £500 per engaged smoker. Qualitative findings highlighted the acceptability and feasibility of delivering the service models.

Interpretation

The maternity support worker model is effective in engaging pregnant women with stop smoking services and has the potential to improve future health outcomes.
Key recommendations:

1. Strict adherence to NICE guidance across all maternity and stop smoking services including:
    a. Provision of CO monitors and necessary consumables to every midwife in Wales
    b. An audit of midwives' training needs
    c. Provision of training (where required), ongoing support and regular feedback for all midwives
    d. Consistent opt out referral system e. Regular audit of CO monitoring and opt-out referral system
2. Specialist stop smoking support to become a key component of antenatal care rather than 'add-on' service. Stop smoking specialist embedded within antenatal care, visible to midwives and maternity support workers.
3. Recruitment of specialist maternity support workers within maternity services who specialise in supporting women to stop smoking during pregnancy with dedicated administration support.
4. Regular supervision of specialist staff by both midwifery and stop smoking services
5. Flexible method of treatment delivery to include home based, one-to-one appointments and unlimited treatment throughout pregnancy. Text and telephone support if required.
6. Consistent and bespoke data collection / recording to reflect the flexible model of delivery required for pregnant women and use of electronic data management systems. In particular, the recording of CO monitoring outcome is vital as self-report smoking status is unreliable and is important for evaluation purposes.
7. Collection, recording and evaluation of data on smoking status at booking and in the third trimester and birth outcomes
8. Opportunity for referral to specialist stop smoking service at any point during pregnancy.
9. Feedback to referring midwives on progress and outcomes of women referred to the stop smoking service.
10. Provision of consistent evidence-based advice regarding whether women should use NRT and to facilitate the process of accessing NRT for women who require it.

Strengths of this research

The report provides extensive detail on the implementation of this flexible, bespoke intervention which proved to be effective in engaging pregnant women. It is quasi-experimental and it provides a reasonable level of certainty that differences between intervention and control groups were real and not due to chance. It highlights the potential benefits of having a dedicated maternity support worker for promoting uptake of stop smoking services. Due to the qualitative aspects of the study there is rich detail on how and why certain elements of the intervention worked or failed to work. It provides clear, actionable recommendations which should help implementation. There is also information on the estimated costs of such a programme which can help to compare this intervention with others.

Limitations of this research
As this trial was not blinded at the allocation level, there is a risk of bias which undermines the certainty of the findings. The statistical methodology is not entirely clear and therefore difficult to scrutinise. While the context of this intervention is certainly comparable to the Warwickshire and Coventry context, this intervention was carried out seven years ago in in NHS Wales, and for that reason there may be aspects of the intervention which are not feasible, affordable, or have been superseded by improvements made locally in the meantime. Similar to the BabyClear intervention, the exact "active ingredients" needed for the success of this intervention to be replicated are not clear, this may limit the usefulness of only partially applying recommendations.
Suggested Use
Implement the recommendations as outlined if feasible and if this intervention compares favourably to others in terms of effectiveness and cost effectiveness. This report would likely be especially useful in the development of new maternal support worker role.

PAPER FOUR
Impact of specialist and primary care stop smoking support on socio-economic inequalities in cessation in the United Kingdom: a systematic review and national equity initial review completed 22 January 2019[4]

Intervention(s)
Review of primary care based stop smoking support, tailored to socio-economic inequalities

Aim
To assess the impact of UK specialist and primary care-based stop smoking support on socio-economic inequalities in cessation.
Methods
Systematic review and narrative synthesis, with a national equity analysis of stop smoking services (SSS). Ten bibliographic databases were searched for studies of any design, published since 2012, which evaluated specialist or primary care-based stop smoking support by socio-economic status (SES) or within a disadvantaged group. Studies could report on any cessation-related outcome. National Statistics were combined to estimate population-level SSS reach and impact among all smokers by SES. Overall, we included 27 published studies and three collated, national SSS reports for England, Scotland and Northern Ireland (equivalent data for Wales were unavailable).
Results
Primary care providers and SSS in the United Kingdom were particularly effective at engaging and supporting disadvantaged smokers. Low SES groups were more likely to have their smoking status assessed, to receive general practitioner brief cessation advice/SSS referral and to attempt a quit with SSS support. Although disadvantaged SSS clients were less successful in quitting, increased service reach offset these lower quit rates, resulting in higher service impact among smokers from low SES groups. Interventions that offer tailored and targeted support have the potential to improve quit outcomes among disadvantaged smokers.

Conclusions
Equity-orientated stop smoking support can compensate for lower quit rates among disadvantaged smokers through the use of equity-based performance targets, provision of targeted services and the development of tailored interventions.
Strengths of this research
As a systematic review including 27 studies this research provides evidence from a broad range of sources including reports and academic papers which helps to increase confidence in accuracy of the findings. It highlights the importance of GP services in providing equitable smoking cessation support as part of the broader NHS Trust-based strategy, this is particularly useful as equity is likely to be an important factor in increasing service provision locally. The papers included are typically recent (from 2012 onwards) and from within the UK healthcare system, which further increases the likely applicability. The authors bring to light the importance of compensating for consistent finding of lower quit rates among low SES smokers by increasing their engagement with SSS through equity orientated interventions. They highlight that incentivising GPs to ask about smoking status and to give brief advice has been found to be effective (via the Quality Outcomes Framework) and that incentivising smokers directly is also effective. While not the exclusive population of interest in this review, the review does include research focused on pregnant smokers.
Limitations of this research
Much of the literature included in this review did not have the evaluation of equity as a primary outcome, because of this some of the research may have been of overall high quality but the equity evaluation aspects may not have been as high quality or detailed. While more a limitation of the literature than the systematic review itself, limited efficacy and mixed results reported in the papers reviewed means that several interventions designed to improve equity may not at this point be ruled in or out (see table 4, taken from the original review paper, for examples of these).
Suggested Use
These findings support the participation of GP practices, perhaps via Warwickshire and Coventry PCNs, in the development and roll-out of a smoking in pregnancy programme. GP led Equity-tailored interventions may be especially helpful in increasing engagement in SSS as well as successful quit rates, however, some of these interventions are likely best implemented on an experimental basis with close monitoring according to the findings of this review.

PAPER FIVE
Incentives for smoking cessation- Cochrane Systematic Review[5]

Intervention(s)
Monetary based incentives for smoking cessation in non-pregnant and pregnant smokers

Background
Financial incentives, monetary or vouchers, are widely used in an attempt to precipitate, reinforce and sustain behaviour change, including smoking cessation. They have been used in workplaces, in clinics and hospitals, and within community programmes.

Objectives
To determine the long-term effect of incentives and contingency management programmes for smoking cessation.
Search methods
For this update, we searched the Cochrane Tobacco Addiction Group Specialised Register, clinicaltrials.gov, and the International Clinical Trials Registry Platform (ICTRP). The most recent searches were conducted in July 2018.
Selection criteria
We considered only randomised controlled trials, allocating individuals, workplaces, groups within workplaces, or communities to smoking cessation incentive schemes or control conditions. We included studies in a mixed-population setting (e.g. community, work-, clinic- or institution-based), and also studies in pregnant smokers.
Data collection and analysis
We used standard Cochrane methods. The primary outcome measure in the mixed-population studies was abstinence from smoking at longest follow-up (at least six months from the start of the intervention). In the trials of pregnant women we used abstinence measured at the longest follow-up, and at least to the end of the pregnancy. Where available, we pooled outcome data using a Mantel-Haenzel random-effects model, with results reported as risk ratios (RRs) and 95% confidence intervals (CIs), using adjusted estimates for cluster-randomised trials. We analysed studies carried out in mixed populations separately from those carried out in pregnant populations.
Main results
Thirty-three mixed-population studies met the inclusion criteria, covering more than 21,600 participants; 16 of these are new to this version of the review. Studies were set in varying locations, including community settings, clinics or health centres, workplaces, and outpatient drug clinics. We judged eight studies to be at low risk of bias, and 10 to be at high risk of bias, with the rest at unclear risk. Twenty-four of the trials were run in the USA, two in Thailand and one in the Phillipines. The rest were European. Incentives offered included cash payments or vouchers for goods and groceries, offered directly or collected and redeemable online. The pooled RR for quitting with incentives at longest follow-up (six months or more) compared with controls was 1.49 (95% CI 1.28 to 1.73; 31 RCTs, adjusted N = 20,097; I2 = 33%). Results were not sensitive to the exclusion of six studies where an incentive for cessation was offered at long-term follow up (result excluding those studies: RR 1.40, 95% CI 1.16 to 1.69; 25 RCTs; adjusted N = 17,058; I2 = 36%), suggesting the impact of incentives continues for at least some time after incentives cease. Although not always clearly reported, the total financial amount of incentives varied considerably between trials, from zero (self-deposits), to a range of between USD 45 and USD 1185. There was no clear direction of effect between trials offering low or high total value of incentives, nor those encouraging redeemable self-deposits.
We included 10 studies of 2571 pregnant women. We judged two studies to be at low risk of bias, one at high risk of bias, and seven at unclear risk. When pooled, the nine trials with usable data (eight conducted in the USA and one in the UK), delivered an RR at longest follow-up (up to 24 weeks post-partum) of 2.38 (95% CI 1.54 to 3.69; N = 2273; I2 = 41%), in favour of incentives.
Authors' conclusions
Overall there is high-certainty evidence that incentives improve smoking cessation rates at long-term follow-up in mixed population studies. The effectiveness of incentives appears to be sustained even when the last follow-up occurs after the

withdrawal of incentives. There is also moderate-certainty evidence, limited by some concerns about risks of bias, that incentive schemes conducted among pregnant smokers improve smoking cessation rates, both at the end of pregnancy and post-partum. Current and future research might explore more precisely differences between trials offering low or high cash incentives and self-incentives (deposits), within a variety of smoking populations.

Key Points

General trials: Six months or more after the beginning of the trial, people receiving rewards were more likely to have stopped smoking than those in the control groups. Success rates continued beyond when the incentives had ended. Studies varied in the total amounts of rewards that were paid. There was no noticeable difference between trials paying smaller amounts (less than USD 100 (US dollars)) compared to those paying larger amounts (more than USD 700).

Pregnancy trials: Combining data from nine trials showed that women in the rewards groups were more likely to stop smoking than those in the control groups, both at the end of the pregnancy and after the birth of the baby.

Strengths of this Research

With a large pooled sample size of 21,600 this is a well powered study. The authors carried out this systematic review in accordance with Cochrane methods of analysis which is considered a gold standard, this increases the expected reliability of the findings. Only randomised controlled trials were included in the final analysis, as this type of trial is considered the gold standard for determining efficacy and causation, this further increases our confidence in the paper's findings. The recency increases the likelihood of applicability, and the separate analysis of trials focused on pregnant smokers improves the applicability of the findings to our population of interest. The review also addresses the issue of incentive size, finding that efficacy does not vary significantly according to the amount promised to smokers- this is particularly useful as it helps to determine the likely costs and viability of an incentive programme in the Coventry and Warwickshire context. The authors specify their certainty of the findings, rating the efficacy of incentives for the general population as high, and efficacy of incentives.

Limitations of this Research

Very few studies included were from the UK which may limit the applicability of the findings to the local context. While the research included was of a very high standard, the exclusion of non-RCT studies means the findings may lack ecological validity, which is to say that while incentives may work well under the controlled conditions of a trial, these results may not hold true under 'real world' conditions.

Suggested Use: an incentive programme could be included in a Warwickshire and Coventry strategy to maximise the possibility of smoking cessation among pregnant smokers. In addition, this research suggests that incentives would be highly likely to be effective among smokers in general and may be included in a broader strategy.

PAPER SIX

Financial incentives for smoking cessation in pregnancy: randomised controlled trial[6].

NB: this study is included in the above systematic review, it is included separately here to give more detailed information on the components of a successful incentives programme in the UK.

Intervention
Financial incentives with behavioural support versus routine care (including behavioural support)
Objective
To assess the efficacy of a financial incentive added to routine specialist pregnancy stop smoking services versus routine care to help pregnant smokers quit.
Design
Phase II therapeutic exploratory single centre, individually randomised controlled parallel group superiority trial.
Setting
One large health board area with a materially deprived, inner city population in the west of Scotland, United Kingdom.
Participants
612 self-reported pregnant smokers in NHS Greater Glasgow and Clyde who were English speaking, at least 16 years of age, less than 24 weeks pregnant, and had an exhaled CO breath test result of 7 ppm or more. 306 women were randomised to incentives and 306 to control.
Interventions
The control group received routine care, which was the offer of a face to face appointment to discuss smoking and cessation and, for those who attended and set a quit date, the offer of free nicotine replacement therapy for 10 weeks provided by pharmacy services, and four, weekly support phone calls. The intervention group received routine care plus the offer of up to £400 of shopping vouchers: £50 for attending a face to face appointment and setting a quit date; then another £50 if at four weeks' post-quit date exhaled CO confirmed quitting; a further £100 was provided for continued validated abstinence of exhaled CO after 12 weeks; a final £200 voucher was provided for validated abstinence of exhaled CO at 34-38 weeks' gestation.
Main Outcome Measure
The primary outcome was cotinine verified cessation at 34-38 weeks' gestation through saliva (<14.2 ng/mL) or urine (<44.7 ng/mL). Secondary outcomes included birth weight, engagement, and self reported quit at four weeks.
Results
Recruitment was extended from 12 to 15 months to achieve the target sample size. Follow-up continued until September 2013. Of the 306 women randomised, three controls opted out soon after enrolment; these women did not want their data to be used, leaving 306 intervention and 303 control group participants in the intention to treat analysis. No harms of financial incentives were documented. Significantly more smokers in the incentives group than control group stopped smoking: 69 (22.5%) versus 26 (8.6%). The relative risk of not smoking at the end of pregnancy was 2.63 (95% confidence interval 1.73 to 4.01) P<0.001. The absolute risk difference was 14.0% (95% confidence interval 8.2% to 19.7%). The number needed to treat (where financial incentives need to be offered to achieve one extra quitter in late pregnancy) was 7.2 (95% confidence interval 5.1 to 12.2). The mean birth weight was 3140 g (SD 600 g) in the incentives group and 3120 (SD 590) g in the control group (P=0.67).
Conclusion
This phase II randomised controlled trial provides substantial evidence for the efficacy of incentives for smoking cessation in pregnancy; as this was only a single

centre trial, incentives should now be tested in different types of pregnancy cessation services and in different parts of the United Kingdom.

PAPER SEVEN
Are financial incentives cost-effective to support smoking cessation during pregnancy?[7]

Intervention
Financial incentives with behavioural support versus routine care (including behavioural support) – economic analysis

Aims
To investigate the cost-effectiveness of up to £400 worth of financial incentives for smoking cessation in pregnancy as an adjunct to routine health care.
Design
Cost-effectiveness analysis based on a Phase II randomized controlled trial (RCT) and a cost-utility analysis using a life-time Markov model.
Setting
The RCT was undertaken in Glasgow, Scotland. The economic analysis was undertaken from the UK National Health Service (NHS) perspective.
Participants
A total of 612 pregnant women randomized to receive usual cessation support plus or minus financial incentives of up to £400 vouchers (US $609), contingent upon smoking cessation.
Measurements
Comparison of usual support and incentive interventions in terms of cotinine-validated quitters, quality-adjusted life years (QALYs) and direct costs to the NHS.
Findings
The incremental cost per quitter at 34-38 weeks pregnant was £1127 ($1716).This is similar to the standard look-up value derived from Stapleton & West's published ICER tables, £1390 per quitter, by looking up the Cessation in Pregnancy Incentives Trial (CIPT) incremental cost (£157) and incremental 6-month quit outcome (0.14). The life-time model resulted in an incremental cost of £17 [95% confidence interval (CI) = -£93, £107] and a gain of 0.04 QALYs (95% CI = -0.058, 0.145), giving an ICER of £482/QALY ($734/QALY). Probabilistic sensitivity analysis indicates uncertainty in these results, particularly regarding relapse after birth. The expected value of perfect information was £30 million (at a willingness to pay of £30 000/QALY), so given current uncertainty, additional research is potentially worthwhile.
Conclusion
Financial incentives for smoking cessation in pregnancy are highly cost-effective, with an incremental cost per quality-adjusted life years of £482, which is well below recommended decision thresholds.
Strengths of this research
As an RCT, the design of this study maximises the possibility of inferring causation between intervention and quit rates. Allocation to the intervention or control group was concealed from both the clients and the staff with reduced the risk of observer or participant bias or observer bias. This increases the certainty that there is a causal relationship between incentives and increased smoking cessation. As the population

of interest, pregnant smokers of mixed socioeconomic status in the UK, is similar to our own population of interest, this increases the applicability of findings to our own context. This study showed that pregnant smokers were more than two and a half times more likely to have quit by the end of pregnancy. The authors dealt with the ethical concerns sometimes raised around incentives indicating that there was little evidence of "gaming" the intervention. This intervention is equity positive. The cost-effectiveness analysis paper indicated that incentivisation is likely to be very cost-effective. This intervention has the added benefit of being likely to be particularly beneficial to pregnant smokers of lower socio-economic status.

Limitations of this research

While the population of interest here are likely to be more like our own population of interest than those from a completely different jurisdiction, e.g. USA, this was only a single centre design in Glasgow which may mean there distinct environmental or demographic factors in that area which are not shared with our population. This potentially reduces the generalisability of findings. Randomisation was indicated however, the methods used was underspecified, which somewhat reduces the certainty of successful randomisation. While undoubtedly cost effective, it is possible that this intervention is more expensive than alternatives- however, as per previous systematic review, it may be possible to reduce the cost and still increase the smoking cessation rate. As the trial was carried out over five years ago, there maybe other changes to the health and social care system which could affect the ultimate impact of this intervention.

Suggested Use

As well as reiterating the evidence of efficacy of financial incentives for smoking in pregnancy, these papers provide a blueprint for how an incentives programme might work in our context, along with the kinds of costs and cost-effectiveness we might expect from such a programme.

PAPER EIGHT

Accessing National Health Service Stop Smoking Services in the UK: a COM-B analysis of barriers and facilitators perceived by smokers, ex-smokers and stop smoking advisors[8]

Objective

Smokers who access free National Health Service (NHS) Stop Smoking Services (SSS) in the UK are four times more likely to stop smoking, yet uptake of the services has been in decline in recent years. Evidence was collated to explore the beliefs of smokers, ex-smokers and Stop Smoking Advisors (SSAs) about SSS and the barriers and facilitators to access.

Study Design

Mixed-methods design including i) a search of the literature; ii) a cross-sectional online questionnaire completed by 38 smokers and ex-smokers; and iii) semi structured interviews with 5 SSAs.

Methods

PubMed, Web of Science, Scopus, Prospero and the NIHR Portfolio were searched in October 2017 to identify relevant studies. Smokers and ex-smokers were recruited to the online questionnaire via Public Health websites and social media in Warwickshire. SSAs identified via Public Health Warwickshire were invited to take part in an interview conducted over the telephone. Findings were collated and

analysed using the COM-B ('Capability', 'Opportunity', 'Motivation' and 'Behaviour') model framework.

Results

A range of practical and psychological or belief-based barriers and facilitators to accessing SSS were identified within all the components of the COM-B model, aside from physical capability, for example; 'Psychological capability', such as lack of understanding about what the service offers; 'Reflective motivation', such as lack of confidence in service efficacy; and 'Social opportunity', such as recommendations from healthcare professionals to attend. Suggestions and consideration on how future tobacco control intervention and public health messages can address these components are reported.

Conclusions

Public health interventions and campaigns may benefit from focussing on addressing the well-known perceived barriers and facilitators smokers experience, in particular focussing on the components of the COM-B that have been identified as being important to increase the uptake of SSS.

In-Depth Look at findings

As this research draws on qualitative evidence from Warwickshire, it may be useful to go into greater depth on these findings. Below are some key points from this paper.

Psychological Capability: Knowledge and understanding of the Stop Smoking Service

Barriers

A large proportion of participants:

- did not know the service existed
- had little or incorrect information about what the service offered
- Did not know how they could access it.

Suggested solutions: To increase the psychological capability of the people eligible to access the service, efforts should focus on clear and widely available information (education) about the available services, what they involve, what they can offer and what smokers can expect from the entire process as well as their efficacy and success stories (persuasion/modelling). This information should be shared via multiple avenues, including but not limited to, health professionals, online information, advertisement in relevant community locations etc. to reach the target audience.

Physical Opportunity

Barriers

- Concern that there would be a lack of suitable appointments if they tried to book, and that they would have to take time off work to attend
- Concern that the appointment would be in a location which would be hard for them to get to (rather than, for example, a community pharmacy where they could also pick up a prescription for NRT)
- Concern around accessing childcare
- Concern around the cost of NRT

Suggested solutions: Physical opportunity should be addressed by information about available appointment times and the flexibility of the service that is delivered in various locations including pharmacies, and online, which offer support outside of the 9 to 5 working day.

Social Opportunity

Facilitators

- Prompting of use of service by healthcare professionals who could provide credible evidence of efficacy, and examples of success stories (it was rare that people would self-refer)
- Support and encouragement from healthcare professionals

Barriers

- Fear of embarrassment of other people finding out they are attending Stop Smoking Services
- Living with a smoker
- Fear of being judged or blamed by stop smoking advisors

Suggested Solutions

Social opportunity should be addressed by enabling a supportive environment not only in terms of the healthcare professionals before and during access to services but also on a wider scale that would help to diminish any stigma associated with accessing health services, or smoking itself. This could be achieved by use of stories of similar people who have openly discussed their successful use of the service (persuasion/modelling).

Reflective Motivation

Barriers

- Scepticism about how effective the stop smoking service would be for them, a belief that they could do it on their own
- Belief that they would be "nagged", "lectured" and "judged" by Stop Smoking Advisors
- Belief they would be overloaded with information on the health consequences of smoking

Facilitators

- Knowing more about the approach (e.g. non- judgmental, person-centred) and format of the service (e.g. individual or group, number of sessions)
- Understanding that attending a session doesn't mean you have to immediately quit smoking, but rather is a chance to explore options around quitting

Suggested Solutions:

Reflective motivation was one of the most significant components and should be addressed with efforts aimed at reframing some of the beliefs held by smokers about SSS that are pivotal to access (persuasion), along with making it clear from the start what a person accessing the service can expect along the whole journey and the ethos of the service.

Automatic Motivation (emotions, and automatic thoughts)

Barriers

- Embarrassment around accessing smoking cessation services (e.g. being the "type of person" who needs this support)
- Fear of trying, but failing, to quit by set quit date

Facilitators

- Incentives to attend

Suggested Solutions: Efforts at increasing automatic motivation, although not one of the most significant components in the analysis, should focus on reframing the ideas that are held around help-seeking behaviour using education, persuasion, modelling and offering some form of positive reinforcement (incentivisation) throughout the process of identifying, accessing and attending a Stop Smoking Service.

Strengths of this Research

As qualitative research synthesising evidence from a range of different sources this

study provides both breath and depth on the barriers and facilitators to accessing stop smoking services, this approach has generated insights which can help shape the messages around SSS as well as the content of interventions and modes of delivery. By mapping the findings to the COM-B model, the authors were able to specify the ways in which psychological capability, physical and social opportunity, as well as reflective and automatic motivation influence SSS accessing behaviours. As the COM-B model is part of a broader implementation framework- The Behaviour Change Wheel- it means that potential interventions may be explored in a more systematic way. Each element of the COM-B model has intervention functions (e.g. education, environmental restructuring or modelling) and behaviour change techniques (e.g. graded tasks, habit reversal, behavioural experiments) which will be more or less effective at addressing it. While the sample size is small the authors indicate that their findings echoe those found in the wider literature adding to the likelihood of generalisability. As part of the research has been carried out in Warwickshire it is likely that the findings will be applicable for our context. See The Horizon Scan section below for information about an app, StopApp, currently in development which draws on this research to help increase engagement with SSS in the West Midlands.

Limitations

The sample size for this research was relatively small, as such there is a moderate to high risk of bias and under representation of views and therefore generalisability. Although the sample is largely Warwickshire based, therefore similar to our population of interest, the recruitment did not focus on pregnant smokers, therefore some of the barriers and facilitators identified might be significantly different to those of pregnant smokers.

Suggested Use

The research can be used to identify in advance potential barriers and facilitators to accessing Stop Smoking Services, the findings may also be useful in formulating questionnaires for quantitative research using a larger sample and targeting our population of interest. Finally, the findings specifically, and the COM-B structure more generally may inform intervention selection and prioritisation in future smoking cessation programme development.

PAPER NINE

Feasibility and Acceptability of 'Opt-In' Referrals for Stop Smoking Support in Pregnancy[9]

Intervention

Opt-in form targeting pregnant women who had initially “opted-out” from referral to SSS.

Background

International guidelines recommend that following an early-pregnancy 'opt-out' referral for smoking cessation support, pregnant women who smoke should also be offered referrals at subsequent antenatal appointments ('opt-in' referrals). We assessed feasibility and acceptability of introducing 'opt-in' self-referral forms to stop smoking services (SSS) in antenatal clinics.

Method

A 'before-after' service evaluation and qualitative interviews. 'Opt-in' self-referral forms were distributed by reception staff to women attending antenatal ultrasound appointments. We collected hospital/SSS data for the study period and a comparison period 12 months prior. Reception staff were interviewed and data analysed thematically.

Results

Over 6500 women entered antenatal care in each period; ~15% smoked and ~50% of those who smoked were referred to SSS at their first appointment. In the study period, 17.4% of women completed 'opt-in' forms. Of these 17.3% smoked, and 23.1% of those who smoked requested a referral. The staff thought new procedures had minimal impact on workload, but were easy to forget. They believed the pathway would be better delivered by midwifery staff, with additional information/advice to improve engagement.

Conclusions

'Opt-in' referrals in later pregnancy result in significant numbers of women who smoke indicating interest in smoking cessation support. Additional training and support is necessary to motivate reception staff to oversee self-referral pen-and-paper procedures effectively.

Strengths of this Research

While previous research has shown that ‘opt-out’ referrals with CO screening delivered systematically by trained healthcare assistants at the point of the first antenatal scan have the potential to significantly increase the uptake of cessation support in pregnancy and greatly improve cessation outcomes (x), this research bridges a gap in the literature by exploring what can be done to increase uptake after initial refusal of support. As research setting is in the UK setting the likelihood of generalisability to our own context is increased, and we can assume that such an intervention would be both feasible and acceptable in the Coventry and Warwickshire context. As a mixed method study, there was additional insight into the feasibility and acceptability. The primary advantage of this research is likely that it explores a relatively low-cost low-burden intervention, with relatively good feasibility, whose effectiveness may be further explored as part of a broader programme.

Limitations of this Research

Ultimately, this study was underpowered and failed to demonstrate a significant difference in referral rates or quit date setting between the before and after periods. The before and after study design of this trial means that there was no randomisation, making it more susceptible to bias.

Suggested Use

This research is primarily included as an example of a relatively straightforward intervention intended to increase referral rates after pregnant smokers have “opted-out” of referral in the context of “opt-in” as a default. It shows that such an intervention is likely feasible and acceptable, and given the paucity of evidence around the issue of “opting-out”, it may reasonably be included in a subsequent broader programme on an experimental basis only with the appropriate adjustments made in accordance with the recommendations (e.g. administered by midwives rather than reception staff).

PAPER TEN
Predictors of Postpartum Return to Smoking: A Systematic Review[10]

Outcome of interest
Factors which predict post pregnancy smoking relapse

Background
Finding effective ways to help pregnant women quit smoking and remain abstinent is a major public health issue. Approximately half of UK women who smoke attempt cessation after conception; unfortunately, up to 75% return to smoking within 12 months postpartum. Interventions for preventing postpartum return to smoking (PPRS) have not been found to be effective. It is important to identify factors associated with PPRS, to inform development of alternative interventions.
Aim Identify by systematic review factors associated with PPRS.
Methods
Systematic searches of electronic databases (MEDLINE, EMBASE, PsychINFO, CINAHL), trials registers, and conference proceedings were conducted to November 2016. Studies statistically examining factors associated with PPRS were included. Modified versions of the Newcastle Ottawa Quality Assessment Scale were used to assess studies' quality and a narrative synthesis focused on those judged of high quality.
Results
Thirty-nine studies (12 trials, 27 observational studies) were included. Thirty-one (79.5%) studies were high-quality. Among these, the most common significant predictors of PPRS were being less well educated, younger, multiparous, living with a partner or household member who smoked, experiencing higher stress, depression or anxiety, not breastfeeding, intending to quit only for pregnancy and low confidence to remain abstinent postpartum.
Conclusions
Of the factors found to be associated with PPRS, intending to quit smoking only for the duration of pregnancy, partner/household member smoking and confidence to remain abstinent are those most likely to have a direct, causal impact on smoking behaviour after childbirth, and need to be considered when designing interventions to prevent PPRS.
Implications
Considering how having a partner or household member who smokes, intending to quit smoking only for pregnancy, having self-efficacy to quit long term, breastfeeding and depression exert direct or indirect impacts on women's relapse to smoking and how such impacts could successfully be manipulated will inform development of new interventions to prevent PPRS.
Strengths of this research
This review brings together the research on the predictors of postpartum relapse which has been identified as a significant issue at both the national and local levels. This is a broad review and as a large proportion of included studies were deemed high quality, this increases our certainty that these predictors do in fact play a role in post pregnancy relapse and can therefore meaningfully help to inform approaches to follow-up care for pregnant smokers. The research included deals exclusively with post pregnancy women so the findings are likely to be applicable to our population of interest.

Limitations of this research
Due to the heterogeneity of reporting in the literature, it was not possible for the authors to conduct a meta-analysis which would have further increased our certainty in the author's findings. As most of the studies included were carried out in the USA, there may be healthcare, socio-cultural or socio-economic factors effecting predictors which do not apply in the UK context. While the review identifies predictors of postpartum relapse, there is no evidence provided on whether manipulating these factors would result in a reduction in relapse, as intervention studies were excluded, there was no specific insights into the sorts of interventions which might be most effective at addressing these.
Suggested Use
As relapse after date of delivery has been identified as a significant issue locally, this research can help identify the key areas to be addressed and interventions which could be developed to improve long term quit outcomes.

PAPER ELEVEN
A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy[11]

Intervention
A two-group, pragmatic, multicentre, randomised at the individual level, controlled trial comparing e-cigarettes NRT for smoking cessation among general population smokers. Including behavioural support in both arms.

Background
E-cigarettes are commonly used in attempts to stop smoking, but evidence is limited regarding their effectiveness as compared with that of nicotine products approved as smoking-cessation treatments.
Methods
We randomly assigned adults attending U.K. National Health Service stop-smoking services to either nicotine-replacement products of their choice (ie. patch, gum, lozenge, nasal spray, inhalator, mouth spray, mouth strip, and microtabs) , including product combinations, provided for up to 3 months, or an e-cigarette starter pack (a second-generation refillable e-cigarette with one bottle of nicotine e-liquid [18 mg per millilitre]), with a recommendation to purchase further e-liquids of the flavour and strength of their choice. Treatment included weekly behavioural support for at least 4 weeks. The primary outcome was sustained abstinence for 1 year, which was validated biochemically at the final visit. Participants who were lost to follow-up or did not provide biochemical validation were considered to not be abstinent. Secondary outcomes included participant-reported treatment usage and respiratory symptoms.
Results
A total of 886 participants underwent randomization. The 1-year abstinence rate was 18.0% in the e-cigarette group, as compared with 9.9% in the nicotine-replacement group (relative risk, 1.83; 95% confidence interval [CI], 1.30 to 2.58; P<0.001). Among participants with 1-year abstinence, those in the e-cigarette group were more likely than those in the nicotine-replacement group to use their assigned product at 52 weeks (80% [63 of 79 participants] vs. 9% [4 of 44 participants]). Overall, throat or mouth irritation was reported more frequently in the e-cigarette group (65.3%, vs. 51.2% in the nicotine-replacement group) and nausea more frequently in the nicotine-replacement group (37.9%, vs. 31.3% in the e-cigarette group). The e-

cigarette group reported greater declines in the incidence of cough and phlegm production from baseline to 52 weeks than did the nicotine-replacement group (relative risk for cough, 0.8; 95% CI, 0.6 to 0.9; relative risk for phlegm, 0.7; 95% CI, 0.6 to 0.9). There were no significant between-group differences in the incidence of wheezing or shortness of breath.

Conclusions

E-cigarettes were more effective for smoking cessation than nicotine-replacement therapy, when both products were accompanied by behavioural support.

Strengths of the Research

As an RCT our confidence in a causal relationship between the intervention and the primary outcome is strengthened, in other words it is more likely than not that the greater smoking abstinence at one-year follow up among the e-cigarette group is as a result of e-cigarette usage rather than due to chance. The randomisation method used was appropriate and clearly outlined increasing certainty that randomisation was successful. Risk of bias was further reduced via blinding at the level of statistical analysis. Participants were recruited from four centres in England, this helped to overcome the socio-economic or geographic effects which might arise in a single-centre trial. The fact that it was an England based trial (London, Sussex and Leister) increases the potential generalisability to Coventry and Warwickshire context as it was carried out in the same health and social care system. A good level of detail of the exact intervention and controls used is given in this paper which helps ensure the intervention could be accurately replicated. As costs and numbers needed to treat also included this improves our ability to compare this candidate intervention with current and potential alternatives.

Limitations of the Research

Due to the fact that the difference between the intervention (e-cigarettes) and control (NRT) was clearly discernible by both clinicians and participants, full blinding of this trial was not possible. This fact may have introduced either experimenter or participant bias. Pregnant or breastfeeding smokers were excluded from the sample so it is possible that these findings would not generalise to our population of interest. However, please see the “Horizon Scan” section for information on an ongoing RCT focused on the use of e-cigarettes for pregnant smokers.

Suggested Use

This research should be considered when future smoking cessation in pregnancy strategy development as it suggests the likelihood of long-term smoking cessation may be significantly increased by the use of e-cigarettes instead of NRT. However, further evidence is needed on the safety of e-cigarettes for pregnant smokers as there is a lack of evidence in this area. Overall, e-cigarettes may play a harm reduction role for pregnant smokers and may be more effective than NRT. See horizon scan for more information on the ongoing RCT focused on the use of e-cigarettes for pregnant smokers

Horizon Scan

Below are some emerging research publications and products which may further inform the development of a smoking cessation in pregnancy strategy.

(i)Tailored digital behaviour change intervention with e-referral system to increase attendance at NHS stop smoking services (the MyWay project): randomised controlled feasibility trial [12](protocol only)

Status: pre-publication as of 2019

Intervention: app

Introduction

In the UK, smokers who use Stop Smoking Services (SSS) are four times more likely to stop smoking than smokers who do not. Attendance has declined, warranting the development of interventions to address this. StopAppTM is a novel, brief online behaviour change intervention designed to address common barriers to SSS attendance. It links to widely commissioned service management software which enables instant appointment booking at a user's location and time of choice.

Methods and analysis

A two-arm parallel group individual participant randomised feasibility RCT of StopAppTM (intervention) compared with standard promotion of and referral to SSSs (control). The study includes a nested qualitative process evaluation to assess the acceptability of the research processes, with a sub-sample of participants. Smokers aged over 16 years will be recruited via three routes: GP practices, community settings and online. After consenting and the collection of baseline data, participants will be randomised to control or intervention groups. Participants in the intervention group receive a link to StopAppTM and those in the control group receive standard web-based information about the SSS. All participants are told they can book a SSS appointment but are under no obligation to do so. Online follow-up 2 months post randomisation includes data on SSS use and CO verified 4 week quit rates. The study aims to recruit 162 smokers.

Location: Birmingham and the West Midlands

Potential benefits for Warwickshire and Coventry

As this research is being carried out locally it is highly likely to be generalisable to our context once published. This intervention aims to overcome many of the barriers indicated in the COM-B analysis and should be especially useful for increasing to referrals. No indication of a publication date has been given yet.

(ii)Voke

Voke is a relatively new NRT inhaler designed to better mimic the experience of smoking compared to other inhaler solutions. Unlike e-cigarettes It does not involve heating or vapor. Voke 0.45mg inhaler is a medicinal nicotine preparation for use as NRT. It is a propellant based nicotine aerosol for oral inhalation, comprising pharmaceutical grade nicotine and five other excipients approved for inhalation, including HFA-134a (a standard propellant in asthma inhalers). Voke inhaler relieves and/or prevents craving and nicotine withdrawal symptoms associated with tobacco dependence. It is indicated to aid smokers wishing to quit or reduce prior to quitting, assisting smokers who are unwilling or unable to smoke, and as a safer alternative to smoking for smokers and those around them. Voke inhaler is used as and when required, to satisfy nicotine cravings. Frequency of use will depend on a range of variables, including number of cigarettes smoked previously and time since smoking cessation. Each stick holds 0.45mg nicotine and delivers 0.43mg nicotine through a series of puffs. The stick can be recharged 20 times and has been designed to be visually like a pack of 20 cigarettes.

Potential Benefits to Warwickshire and Coventry

Voke is already available to prescribe, and costs 11.99 per unit (20 charges- the equivalent of a pack of cigarettes). It may be a preferable alternative to either e-cigarettes or traditional NRT inhalers because the look and feel of the experience may be closer to the smoking habit pregnant smokers are trying to break, and it is more similar to NRT products which have been in use longer than e-cigarettes.

However, in should be noted that there does not appear to be any independent, robust research comparing Voke to other NRT or e-cigarette options and as such it may be useful to closely monitor it's effectiveness compared with other smoking cessation options.

(**iii)Effectiveness and cost-effectiveness of a tailored text-message programme (MiQuit) for smoking cessation in pregnancy: study protocol for a randomised controlled trial (RCT) and meta-analysis**[13]

Background

Smoking in pregnancy is a major international public health problem. Self-help support (SHS) increases the likelihood of women stopping smoking in pregnancy and delivering this kind of support by text message could be a cost-effective way to deliver SHS to pregnant women who smoke. SHS delivered by text message helps non-pregnant smokers to stop but the currently available message programmes are not appropriate for use in pregnancy.

A randomised controlled trial (RCT) has demonstrated the feasibility and acceptability of using a programme called 'MiQuit' to text SHS support to pregnant women who smoke. Another pilot RCT has shown that it would be feasible to run a larger, multi-centre trial within the UK National Health Service (NHS). The aim of this third RCT is to complete MiQuit's evaluation, demonstrating whether or not this is efficacious for smoking cessation in pregnancy.

Methods/design

This is a multi-centre, parallel-group RCT. Pregnant women aged over 16 years, of less than 25 weeks' gestation who smoke one or more daily cigarettes but smoked at least five daily cigarettes before pregnancy and who understand written English and are being identified in 24 English antenatal care hospitals. Participants are randomised to control or intervention groups in a 1:1 ratio stratified by gestation (< 16 weeks versus ≥ 16 weeks). All participants receive a leaflet on stopping smoking during pregnancy; they are also able to access standard NHS smoking cessation support. Intervention group women also receive the 12-week MiQuit programme of tailored, interactive text message, and self-help cessation support. Women are followed up by telephone at 4 weeks after randomisation and 36 weeks' gestation. The RCT will recruit 692 women (346 per group), enabling a 95% confidence interval for the difference in quit rates to be estimated within ± 3%. To determine whether or not MiQuit helps pregnant smokers to stop, intervention group quit rates from this trial will be combined with those from the two earlier trials in a Trial Sequential Analysis (TSA) meta-analysis to derive a pooled efficacy estimate. If effective, MiQuit will be a cheap, cost-effective method to help pregnant women to stop smoking.

Trial registration

ClinicalTrials.gov, ID: NCT03231553. Registered on 20 July 2017.

Location: Multi-centre, UK

Potential Benefits for Warwickshire and Coventry

If its efficacy is proven, the MiQuit system could be a cost-effective way of increasing quit rates among pregnant smokers in Warwickshire and Coventry.

(iv)Helping Pregnant smokers quit: A multi-centre RCT of electronic cigarettes and nicotine patches[14]

Smoking in pregnancy remains an unresolved issue. Quit rates in pregnant smokers are low and advice by doctors and nurses, even when combined with behavioural support and nicotine replacement treatment (NRT) has only limited efficacy. Electronic cigarettes (EC) may overcome these limitations. EC allow flexible dosing and have a faster effect than NRT. They also provide some of the sensations and enjoyment that smokers get from smoking. These characteristics should ensure better treatment adherence.

It is estimated that in the UK half a million smokers switched from smoking to vaping (EC use) so far, with 20,000 quitting smoking with the help of EC per year who would not have quit otherwise. There is thus a strong rationale for testing the efficacy of EC as a stop-smoking treatment for pregnant women.

We propose to randomise 1,140 pregnant smokers to either behavioural support provided by pro-active phone calls and accompanied by nicotine patches, or to the same support accompanied instead by EC. The two study arms would be compared in validated abstinence rates at end of pregnancy and in a number of other outcomes including adverse effects and birth and maternal outcomes.

A positive result would provide a new, inexpensive, and practical tool to tackle an important and so far unresolved problem.

The study will recruit pregnant smokers from hospital sites across England and stop-smoking services in Scotland,and is funded by the NIHR.

Duration of trial: 4 years

Contact: Mays Jawad email: research.governance@qmul.ac.uk

Sponsor organisation: Queen Mary University of London, Joint Research Management Office

Potential Benefits for Coventry and Warwickshire

Robust evidence on the efficacy of e-cigarettes as an aid to smoking cessation for pregnant women and their safety for that group would serve to clarify the role they could play in any local smoking in pregnancy strategy. Currently, there is little robust evidence on the safety, harmfulness, or efficacy of any nicotine delivery system including forms or NRT or e-cigarettes so these findings are likely to be very valuable one way or the other. However, the estimated date of publication is likely to be some time in 2024, and therefore may be most appropriate for inclusion in a strategy review rather than the upcoming strategy.

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Appendix 6 Membership of Task and Finish Group

Dawn Fuller	GEH Midwife
Sophy Forman Lynch	WCC PH Commissioner
Dawn Powers	SWFT Warwickshire Specialist Stop Smoking Service
Rachel Harrison	SWFT Midwife
Lorna Coyle	UHCW Midwife
Majella Johnson	SWFT Coventry Specialist Stop Smoking Service
Liann Brookes-Smith,	WCC/WNCCG PH Consultant
Anne Morcombe	UHCW Midwife
Angela Doherty	UHCW Midwife
Sally Talbot	SWFT Midwife
Harbir Nagra	CCC PH Commissioner
Sarah Griffiths	Coventry University Qualitative Analyst
Carmen Baskerville	SWFT Specialist Stop Smoking Service
Berni Lee	Review Lead

Appendix 7 Patient Engagement

Mohita Gupta (Consultant Obstetrician UHCW)

Background

Smoking during pregnancy is a public health problem. Adverse effects include intrauterine growth restriction, placenta previa, abruptio placentae, perinatal mortality. The U.K. Government has ambition to reduce smoking in pregnancy to 6% by 2022. The RCOG Saving Babies' Lives Care Bundle Element 1 specifically focusses on reducing smoking in pregnancy. Vaping is a recommended smoking cessation aid in the U.K.

Objective and Methodology

We carried out an anonymised survey among current pregnant smokers in the second and third trimester of pregnancy, attending the outpatient department, to understand patients' perspectives around vaping. This survey was carried out from September 2019- December 2019 in a weekly antenatal clinic across both hospital sites (UHCW and Rugby). The patients were selected randomly and could opt out if they wished.

Results

We had 21 responses (see survey findings below) 90.4% of respondents felt supported to quit smoking during pregnancy and had received enough information regarding their options. 42.8% of respondents had prior experience of vaping but only 14% used vaping as an alternative during pregnancy. 76% of the respondents cited concerns regarding safety of vaping during pregnancy while 9.5% were unsure of implications of vaping during pregnancy. 66.6% of the respondents felt there was need for more information and guidance regarding vaping during pregnancy.

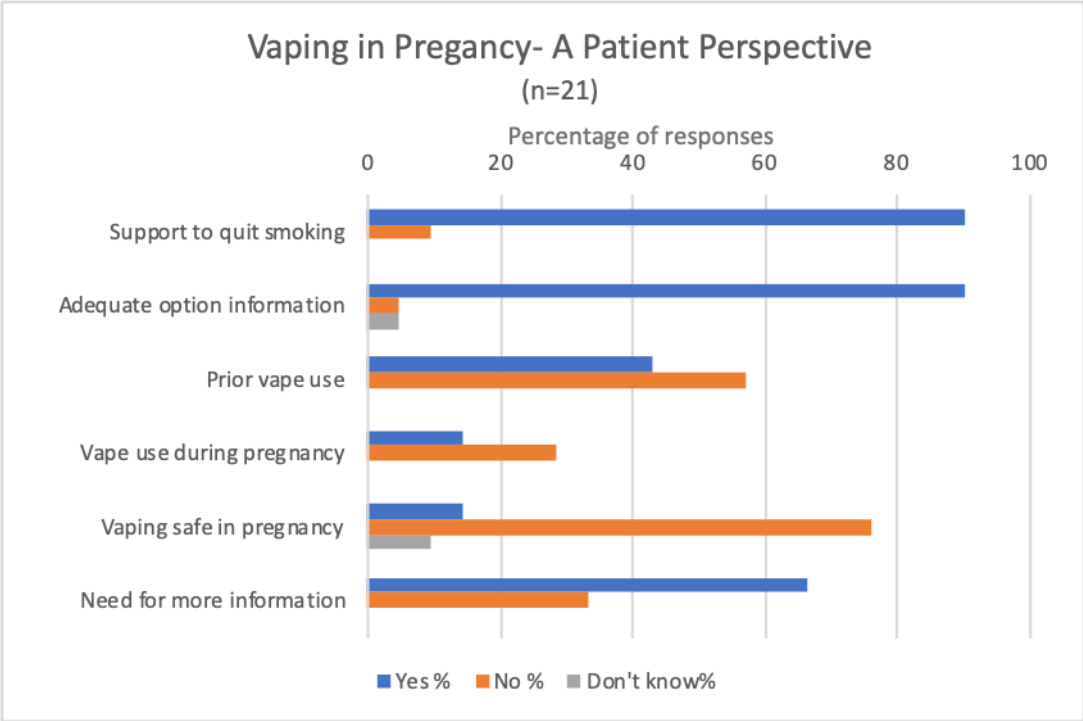
Conclusion/ Action

We feel this survey reflects well on the current UHCW smoking cessation services. It also highlights the fact that there is lack of information and knowledge about vaping during pregnancy among patients. We would recommend use of accessible visual information such as infographics in clinical areas and provision of patient information leaflets regarding vaping.

Importantly, the survey reinforces the urgent need for high-quality evidence regarding safety of vaping during pregnancy and its efficacy as a smoking cessation aid.

Survey Findings:

Question	Responses		
	Yes (%)	No (%)	Don't Know (%)
Support to quit smoking	19 (90.4)	2 (9.5)	0 (0)
Adequate option information	19 (90.4)	1 (4.7)	1 (4.7)
Prior vape use	9 (42.8)	12 (57.1)	0 (0)
Vape use during pregnancy	3 (14.2)	6 (28.5)	0 (0)
Vaping safe in pregnancy	3 (14.2)	16 (76.2)	2 (9.5)
Need for more information	14 (66.6)	7 (33.3)	0 (0)



Appendix 8Overview of Trust Maternity Budgets

	Annual Budget		Birthrate+ wte		Variance	
	wte	£000's	wte	£000's	wte	£000's
GEH	81	3,821	85.86	4,050	4.86	229
SWFT	130	6,432	137.8	6,818	7.8	386
UHCW	218.95	10,556	232.09	11,190	13.14	633
Total	429.95	20,809	455.75	22,057	25.8	1,249

Trust	Number of Births PA	Births per Birthrate + WTE	Births per Annual WTE	Annual Budget per Birth
UHCW	6,039	26 births	27.6	£1,748
SWFT	2,962	21.5 births	22.8	£2,171
GEH	2,096	24.4 births	25.9	£1,823

Source: LMS Update Report November 2019

Appendix 9Checklist for Smoking in Pregnancy Providers

Coventry and Warwickshire Specialist Stop Smoking in Pregnancy Services

	WARWICKSHIRE SERVICE	**COVENTRY SERVICE**
Infrastructure	**Service Response**	**Service Response**
WTE staff	4.5 WTE staff (6 people)	0.4 WTE Band 7 (Bank) 1.6 WTE Band 5 (Specialist smoking advisor) 0.8 WTE Band 6 (Specialist HV advisor) Total: 2.8 WTE staff (4 people)
Staff budget	£198,000	Staff budget currently £108,000
Total budget	£200,000	NRT budget (approximately £9,000) Equipment/consumables Training and travel etc = £20,800 Thus total budget £128,800 (inclusive of NRT) assume £120,000 with NRT excluded
Number of offices/bases	Southam, St Nicholas and Orchard Centre	2 bases (Moat House and Charter Ave), but services delivered in client's home/other settings
Days/hours of service provision (M to F)	8am to 8pm Monday to Friday	Monday to Friday 9 to 5 (where capacity allows this)
Out of hours provision	6 to 8pm Monday to Friday	None
Equipment (eg CO monitors/other?)	12 monitors (2 per member of staff)	5 monitors (1 per person, 1 spare)
IT Equipment/system	Quit Manager	Quit Manager (NB Recently acquired referral module)
Public Communications		
Methods used: website, Facebook, twitter	Have a website, but no FB or twitter account. Do contribute to maternity FB and twitter communications	Not a specific SiP website, but information can be accessed through Family Healthy Lifestyles website.
Patient information provided (CO, E-Cigs, etc)	Service leaflet CO leaflet E-Cigarette sheet	Use national leaflets (NHS/PHE and NHS SiP Challenge group) Some not SiP specific but include leaflet on E-Cigs and CO.
Staff Training		
Number of staff trained – NCSCT certified	6	4 (ie all the team)
Number of staff trained – NCSCT – pregnancy specialty module	6	4 (ie all the team)
Arrangements for annual update training (on-line, face to face etc)	There is no training/formal update for team members (refresher training not available)	Manager organises her own update training.

	Team do NCSCT on-line updates and they have team discussions re: emerging evidence.	Staff attend available 'no cost' study days when possible but these are infrequent. Team undertake all online NCSCT training
Arrangements for staff supervision	Staff have 1:1s, and quarterly 'case study' discussions (in team meeting) Each team member has annual support/supervision with team leader	Team members have 1:1 with the team manager every 4 to 6 weeks and have quarterly safeguarding supervision. All staff have an annual Personal Development Review. Monthly team meetings with supervision session included
Protocols and procedures		
Staff training policy	No formal training policy but do have requirements that need to be met (eg. NCSCT training) Noted that training for FNP teams appears to be good (some elements would be good for the team)	SWFT policy applies – all staff are up to date with mandatory training requirements. Local FHLS training for 0-19 service
Protocol for CO monitoring/quit verification	This is included in NRT guidelines (jointly agreed with the Coventry service)	NRT and CO protocol is in place.
Protocol for NRT provision	This is included in NRT guidelines	NRT and CO protocol is in place.
E-Cig policy	This is included in NRT guidelines	E-cig statements from DH are included in NRT guidance
Protocol for infection control	Procedure for CO monitors	SWFT policy applies and CO monitor Manufacturer specific guidelines re non-alcohol cleaning wipes, changing filters etc
Activity Data		Reported according to DH guidance.
Protocol for equipment maintenance	CO monitors replaced after 5 years	CO monitors do not require calibration/maintenance. Replaced when they stop functioning….
Protocol for referral management	This is included in NRT guidelines	Currently working on a single SOP for SWFT
Quality assurance policy	Adhere to quality standards	Internal audits are undertaken and CQC inspections take place.
Referral Management		
Access criteria/policy – including post-natal period?	This is included in NRT guidelines – receive referrals electronically – and service contacts client within 2 days of receipt. Appointment offered within 2 weeks of receipt	Access for CV1 to CV6 or a Coventry GP. Women can be referred at any point during their pregnancy. Post-natal women can only be accepted if they have been on the programme antenatally (eg a

		self-quitter can't be supported post-nataly)
Specified model treatment plan (number of sessions/contact time per client)	This is included in NRT guidelines	Follow NCSCT treatment programme all recorded in Quitmanager and can be accessed in reports function
Protocol for referral management	This is included in NRT guidelines	Included in guidelines
Process for receiving/ recording referrals	This is included in NRT guidelines	Referrals are still received by post and are allocated to the appropriate advisor (based on area of residence). Where possible (capacity permitting) contact is made within 2 working days and an appointment is made within 2 weeks of referral. Electronic referral system in place since Feb 2020
Method (s) of communication with client (phone, text, written)	Text and phone calls to contact/engage client. After 5 attempts the 6th contact is a letter with a service leaflet) Letter (signifying 'non-engagement' is also sent to Risk Perception midwife.	Attempt phone contact x 3 phone calls are made. Text messages are sent. If unable to contact on the phone clients are sent the 'hard to reach' letter), with an appointment date. Home visit is then undertaken
Target response time for initial contact	2 days to have made contact, 2 weeks to have offered appointment	Target is 2 working days after receipt of the referral to make initial contact. Appointment within 2 weeks.
Average response time achieved	Review data will indicate	This depends on the profile of the client – age and ethnicity/language impact. Some have no phone/credit so it has to be letter. Also depends on staffing levels.
Estimated time 'chasing' establishing client contact	Considered to be substantial (ie making up to 6 contacts per referral)	Can be 3 weeks or more – especially for very vulnerable client or where an interpreter is required. Some clients change/cancel appointments due to chaotic lifestyle/homelessness etc.
Target time to first appointment	2 weeks	Target of 2 days following receipt of referral to contact woman, and target for appointment is within 2 weeks of initial contact.
Average time to first appointment	Review data will indicate	Review data will indicate
Availability of helpline?	There is a mobile number that can be called anytime Clients also have advisors' mobile number	Not a specific SiP helpline- Family Healthy Lifestyles hub can be contacted, and they pass queries to the SiP team. Advisors

		give their work mobile numbers to clients at the first contact attempt
Method of feedback to referrer	If client doesn't engage with the service a letter (copy of letter to client) is sent to the referring midwife and also to the RP midwife. If client engages with the service progress is documented in the green notes (GEH) or on the progress sheet for SWFT referrals	Feedback is sent to the referrer via summary letter. Those who start the program have the information documented in the clients antenatal record
Interventions		
Place(s) of delivery	Home, C&F Centres, Clinics and GP surgeries	Usually client's home but can be other settings (GP surgery or family hub for eg)
Types of support offered (group, 1:1, telephone, text, online, other)	No group support offered (no demand for this) 1:1, telephone, text, online are provided	1:1, face to face, but if working fulltime or if client preference – telephone support can be provided.
Behaviour Change Techniques used	Counselling, motivational interviewing, role modelling, ComB model used to structure	As advised by NCSCT – motivational interviewing, behaviour change support, CO monitoring, treatment of nicotine dependency.
Arrangements for NRT provision	This is included in NRT guidelines	Voucher provided with NRT dispensed by local community pharmacists. No NRT available through clinics at the moment
Advice given on E-Cigs	Use national guidance	As per DH guidance – leaflets and booklet Women are supported on the Quit program who have opted to use an E cig to stop smoking
Approach to relapse prevention	Do pre-delivery appointment (phone or face to face) Advise clients to pack NRT for delivery (in anticipation of smoking urges) Also offer a post-natal visit	Support women until they deliver then provide on PN visit. Do provide coping strategies re: the risk of relapse but cannot provide NRT for prevention of smoking PN.
Provider Training		It is not clear what the expectation of the service is in terms of providing training to front-line staff are not part of the provider organisation. Provide annual update training for midwives at UHCW (including information on CO monitoring,

		referral process and E Cigarettes). Will be providing this training to maternity support workers. Provide brief intervention training for HVs, FNP and Mamta)
Target training sessions to be provided	Providing training is not specified in service contract – but has always been provided, so continues to be delivered.	It is unclear who is responsible for training outside of our organisation
Training sessions provided	Once a month at GEH and at SWFT (total 20 sessions) In the past HVs have been trained but this was not followed by referrals. Now all HVs have to NCSCT on-line training.	Have been delivering 1 session per month to the midwives on the referral pathway. However this has been impacted by staff shortage in ssip and some of the training days have been cancelled by UHCW due staff shortages. .
Methods used for evaluation of training	Feedback from the mandatory training provided to maternity staff is reviewed and informs adjustments to the training provided.	Feedback forms are completed after every training session and adjustments made to content as appropriate
Any on-going supervision of external staff?	Do support RP midwives as required.	No, but do address queries from midwives and other front-line staff.
Data management		
Data management		Monitor data quality eg. Does data meet DH quality criteria? Do internal reports by case worker – highlighting incomplete data, number of patients uncontactable etc Report DH required data is reported within SWFT to service managers.
Monitoring and reporting arrangements/frequency-internal	Quarterly internal report to HV managers	Quarterly reports to commissioner for submission to DH
Monitoring and reporting arrangements/frequency-external	Internal report is shared with external agencies (commissioners) The quarterly DH report is also provided to commissioners	Included in quarterly report (eg staff sickness constraining service capacity)
Exception reporting	As required	As required
Internal audits – frequency/content	Service manager does regular internal audits looking at the activity of	Annual audit of NRT provision in terms of appropriateness/ medical condition

	each advisor – how many assessments, quitters, validated quits etc.	Each advisor has feedback on number of quitters, rate and CO verification
Quality assurance		
Patient satisfaction survey - approach	The service uses 'I want great care' feedback process (does not provide particularly useful feedback from a SiP service perspective)	Each patient on the programme is asked to complete a satisfaction survey at 4 weeks. Need to get at least 20% returned.
Number (%) clients completing	Estimated 50% to 80% of clients provide the feedback	Achieve 20%
Number (%) clients satisfied	Can't recall having a dissatisfied client There has been an occasional complaint, but this comes through a different route (ie not through satisfaction survey)	100% client satisfaction (although sometimes an issue with NRT provision)
Wider partnerships		
Communication with 'mainstream' SSS	Not routinely – liaison would need to be with individual GPs/Pharmacy providers	Do communicate about patients to transfer to mainstream service and alos do joint work in relation to 'Stoptober'
Representation at local and regional forums (eg TBC Alliance)	Do attend LMS meetings but outside of this there is very little opportunity to engage – there used to be WM-wide meetings but these no longer happen.	Used to participate in regional groups, but they no longer exist. Attend smoke-free alliance meetings and the SiP Task and Finish Group.

Appendix 10 Data from National Data Sources

Local population smoking rates

There are different sources of population smoking prevalence data at a national level. The Annual Population Survey (APS**)** is based on an overall sample of about 160,000 across England which would suggest a sample of approximately 1,600 across Warwickshire with numbers weighted to produce county level counts. The methodology for the survey changed over recent years giving uncertainty about the trend in prevalence at a local level.

The GP patient survey provides an alternative means of estimating population smoking prevalence and in based on a larger local sample (7760 across Warwickshire). Hence the population trends evident through the GPPS were considered to be more robust. However, comparison with 'near neighbours' uses the APS data and as such both sources have been used in this report.

Figure 10.1a: Five-year population smoking trend for 18+ smokers at the Local Authority and CCG levels. APS data. England shown for comparison

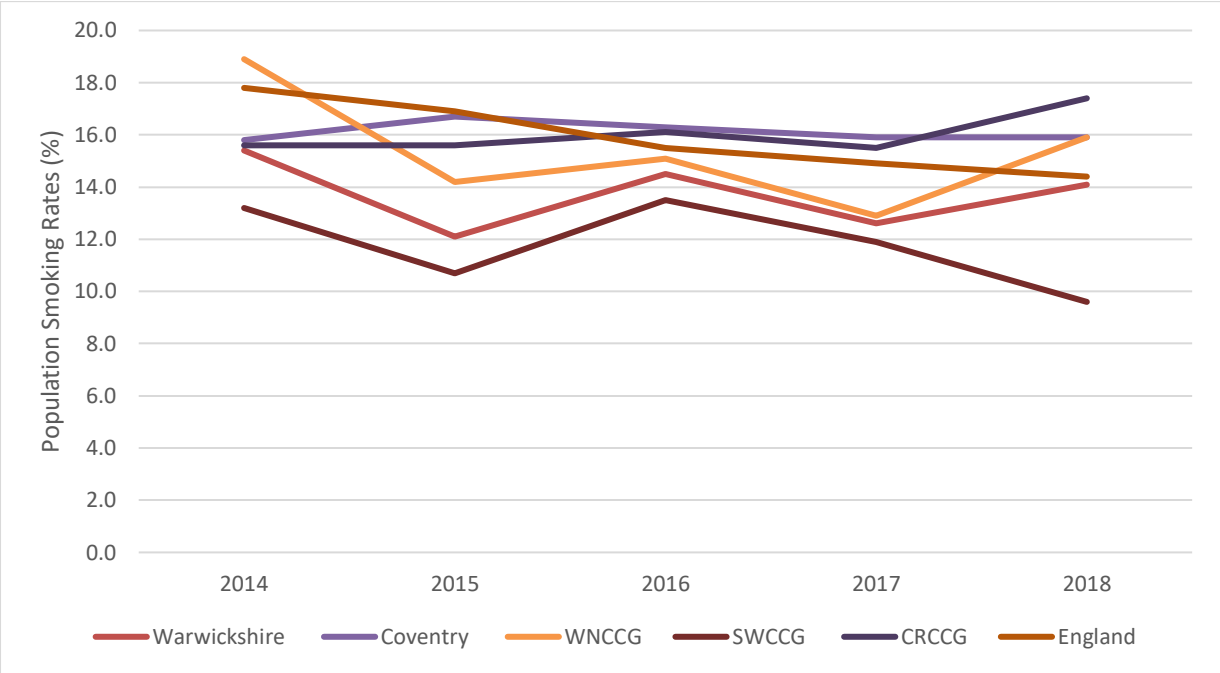


Figure 10.1a shows that, while there has been a general decline in the proportion of the population of smokers in England overall, this trend has not necessarily been followed in the local population. Coventry and Rugby CCG (CRCCG) and Warwickshire North CCG (WNCCG) have demonstrated an increase in smokers in recent years and this has also been demonstrated at the Warwickshire Local Authority level. Warwickshire North CCG and Coventry and Rugby CCG both demonstrate a greater proportion of smokers than the national level and this is also demonstrated at the Coventry Local Authority level.

Figure 10.2a: Five-year population smoking trend for 18+ smokers for District and Borough populations. APS data. England shown for comparison

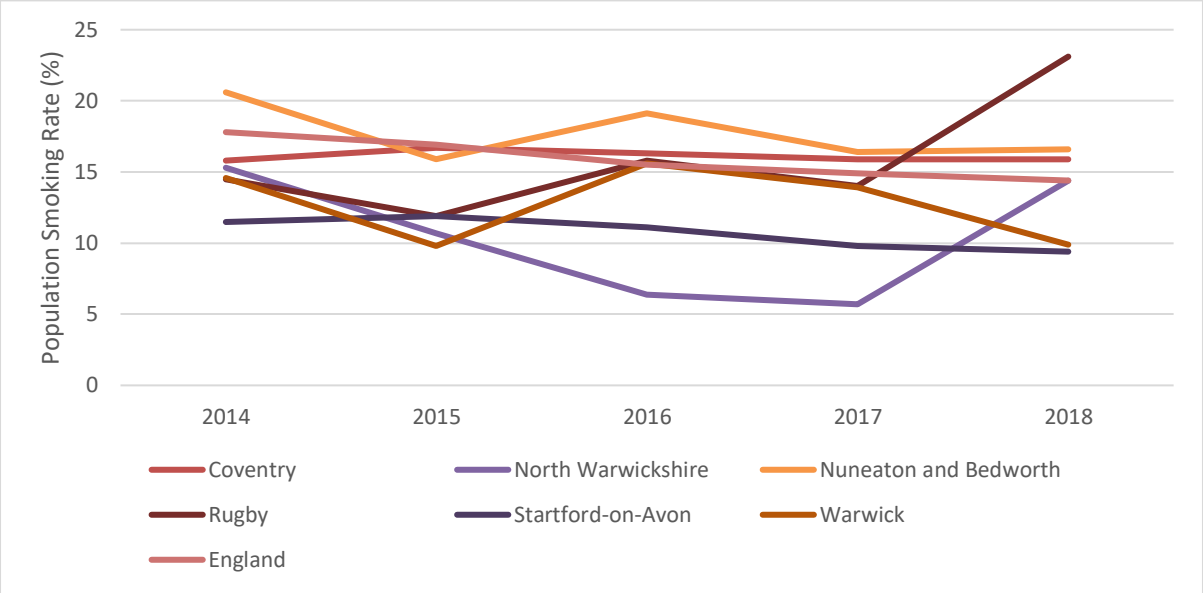


Figure 10.2a shows the APS data for district and boroughs. It shows sharp increases in smoking prevalence for the North Warwickshire and Rugby populations. However, the sample sizes at a local level are relatively small and so these estimates need to be treated with caution.

Nearest Neighbour Definition
CIPFA nearest neighbours tool used by fingertips for comparators to local authorities and D+Bs – *"The Chartered Institute of Public Finance and Accountancy (CIPFA) Nearest Neighbours model seeks to measure similarity between Local Authorities. This is done by following the traditional 'distance' approach whereby a selection of variables (see below) is standardised (with a mean value of zero and a standard deviation of one) and the Euclidian distance between all possible pairs of local authorities is calculated[1]. These distances are then summed across every single subject and 'rebased' (by assigning a distance of 1 to the farthest neighbour meaning all overall distances will lie between zero and one) to calculate the final distance.*
It should be noted that the output returned by these calculations is a simplistic way of presenting complex underlying data. Broadly speaking, the results are what might be expected, though the outcome ultimately relies on the indicators and mathematical procedures used."

Similar 10 CCG explorer tool – an NHS England, PHE and Rightcare tool that fingertips uses to compare CCGs

Appendix 11 Maternity Data Quality Check

Table 1: Total Records (2016/17 to 2018/19) by Trust

Trust	Number of Records (%)
GEH	8,441 (25%)
SWFT	8,652 (25%)
UHCW *	17,135 (50%)
Total	34,228

UHCW * data for 2.5 years

Data was requested for the 3-year period 2016/17 through to 2018/19. UHCW provided 21,228 records but for the period September 2016 through to September 2020. In order to enable matching with other data sources the records from April to September 2020 were removed from the analysis. UHCW would have made up approximately 55% of the total if 3 years full data had been included.

Table 2a: UHCW Total Records (2016/17 to 2018/19) by Local Authority

Year	Coventry	Warwickshire	Other	Total
2016/17 *	2046 (68%)	743 (25%)	220 (7%)	3009
2017/18	4808 (67%)	1844 (26%)	524 (7%)	7186
2018/19	4740 (68%)	1676 (24%)	524 (8%)	6940
Three-year total	11594 (68%)	4263 (25%)	1268 (7%)	17135

2016/17 * data for 6 months

Overall 68% of UHCW's records were for Coventry patients, 25% were for Warwickshire and 7% were for patients from other authorities.

Table 2b: SWFT Total Records (2016/17 to 2018/19) by Local Authority

Year	Coventry	Warwickshire	Other	Total
2016/17	73 (2%)	2390 (83%)	429 (15%)	2892
2017/18	70 (3%)	2314 (85%)	347 (13%)	2731
2018/19	123 (4%)	2353 (78%)	553 (18%)	3029
Three-year total	266 (3%)	7057 (82%)	1329 (15%)	8652

Overall 3% of SWFT's records were for Coventry patients, 82% were for Warwickshire and 15% were for patients from other authorities.

Table 2c: GEH Total Records (2016/17 to 2018/19) by Local Authority

Year	Coventry	Warwickshire	Other	Total
2016/17	84 (3%)	2147 (77%)	572 (20%)	2803
2017/18	116 (4%)	2195 (77%)	554 (19%)	2865
2018/19	123 (4%)	2155 (78%)	495 (18%)	2773
Three-year total	323 (4%)	6497 (77%)	1621 (19%)	8441

Overall 4% of GEH's records were for Coventry patients, 77% were for Warwickshire and 19% were for patients from other authorities.

Prior to the removal of 'other' patients from the dataset some basic 'data quality' checks were undertaken, looking at the completeness of data.

Table 3: Gestation at Booking: Missing or Invalid Data

	Trust total	Invalid Gestation (%)	
UHCW			
2016/17	3009	117	4%
2017/18	7186	210	3%
2018/19	6940	166	2%
	17135	**493**	**3%**
SWFT			
2016/17	2892	70	2%
2017/18	2731	30	1%
2018/19	3029	28	1%
	8652	**128**	**1%**
GEH			
2016/17	2803	247	9%
2017/18	2865	249	9%
2018/19	2773	138	5%
	8441	**634**	8%
	34228	**1225**	**4%**

Overall 4% of booking records had a missing or invalid recorded ‘gestation at booking’ statistic. Of the invalid records 535 (1.6%) were null and 720 (2.1%) were incorrect (eg 65 weeks). It can be seen that over the 3-year period the proportions with an invalid gestation were 3% at UHCW, 1% at SWFT and 8% at GEH.

Table 4: Ethnicity at Booking: Missing Data

	Trust total	Missing Ethnicity (%)	
UHCW			
2016/17	3009	114	4%
2017/18	7186	208	3%
2018/19	6940	161	2%
	17135	**483**	**3%**
SWFT			
2016/17	2892	541	19%
2017/18	2731	406	15%
2018/19	3029	525	17%
	8652	**1472**	**17%**
GEH			
2016/17	2803	520	19%
2017/18	2865	653	23%
2018/19	2773	672	24%
	8441	**1845**	**22%**
	34228	**3800**	**11%**

Overall ethnicity was not recorded for 11% of maternity bookings. The missing values over the 3-year period were 3% at UHCW, 17% at SWFT and 22% at GEH. This compares to 14% of unrecorded ethnicity in nationally reported data.

Table 5: Smoking at Booking: Status Unknown

	Trust total	Unknown Smoking (%)	
UHCW			
2016/17	3009	183	6%
2017/18	7186	615	9%
2018/19	6940	756	11%
	17135	**1554**	**9%**
SWFT			
2016/17	2892	190	7%
2017/18	2731	74	3%
2018/19	3029	80	3%
	8652	**344**	**4%**
GEH			
2016/17	2803	545	19%
2017/18	2865	455	16%
2018/19	2773	386	14%
	8441	**1386**	**16%**
	34228	**3284**	**10%**

Overall smoking status was not recorded for 10% of maternity bookings. The missing values over the 3-year period were 9% at UHCW, 4% at SWFT and 16% at GEH. This compares to 12.2% of unrecorded smoking status in nationally reported data.

Table 6: BMI at Booking: Status Unknown

	Trust total	Missing BMI (%)	
UHCW			
2016/17	3009	430	14%
2017/18	7186	545	8%
2018/19	6940	736	11%
	17135	**1711**	**10%**
SWFT			
2016/17	2892	607	21%
2017/18	2731	416	15%
2018/19	3029	64	2%
	8652	**1087**	**13%**
GEH			
2016/17	2803	642	23%
2017/18	2865	618	22%
2018/19	2773	521	19%
	8441	**1781**	**21%**

	34228	**4579**	**13%**

Overall BMI was not recorded for 13% of maternity bookings. The missing values over the 3-year period were 10% at UHCW, 13% at SWFT and 21% at GEH. This compares to 18.7% of unrecorded BMI in nationally reported data.

A further 17 records had an invalid BMI value (eg values <5) – 14 at GEH, 1 at SWFT and 2 at UHCW.

Table 7: Alcohol at Booking: Status Unknown

	Trust total	Alcohol Unknown	(%)
UHCW			
2016/17	3009	7	0%
2017/18	7186	14	0%
2018/19	6940	6	0%
	17135	**27**	**0%**
SWFT			
2016/17	2892	2892	100%
2017/18	2731	2659	97%
2018/19	3029	2843	94%
	8652	**8394**	**97%**
GEH			
2016/17	2803	633	23%
2017/18	2865	555	19%
2018/19	2773	466	17%
	8441	**1654**	**20%**
	34228	10075	29%

Overall Alcohol was not recorded for 29% of maternity bookings, although it is likely that the data for SWFT reflects a failure of the data item to be included in the submission rather than providing an accurate reflection of the alcohol data that is recorded. Based on the data submitted for this analysis, the 'alcohol unknown' figures over the 3-year period were 0% at UHCW, 97% at SWFT and 20% at GEH.

Excluding SWFT 'unknowns' from the analysis there would be a total of 1681 unknowns 7% of the total GEH and UHCW records. With SWFT data included 29% had an unrecorded alcohol status. This compares to 43% of unrecorded alcohol in nationally reported data.

Table 8: MH at Booking: Status Unknown

	Trust total	MH Missing	(%)
UHCW			
2016/17	3009	7	0%
2017/18	7186	14	0%
2018/19	6940	6	0%
	17135	**27**	**0%**
SWFT			
2016/17	2892	231	8%

2017/18	2731	334	12%
2018/19	3029	469	15%
	8652	**1034**	**12%**
GEH			
2016/17	2803	2552	91%
2017/18	2865	2613	91%
2018/19	2773	2382	86%
	8441	**7547**	**89%**
	34228	8608	25%

Overall MH status was not unknown for 25% of maternity bookings. The missing values over the 3-year period were 0% at UHCW, 12% at SWFT and 89% at GEH. Excluding the GEH data on the basis that this may be an artefact of the way in which the data was provided for the submission, the overall proportion of records with missing MH status was 0% or with GEH included MH was unknown for 25% of all records.

Table 9: Smoking at 36 weeks: Status Unknown

	Trust total	**36-week smoking status**	**(%)**
UHCW			
2016/17	3009	2398	80%
2017/18	7186	5984	83%
2018/19	6940	5520	80%
	17135	**13902**	**81%**
SWFT			
2016/17		NA	
2017/18		NA	
2018/19		NA	
GEH			
2016/17	2803	775	28%
2017/18	2865	714	25%
2018/19	2773	578	21%
	8441	**2067**	**24%**
	25576	**15969**	**62%**

Overall 36-week smoking status was not unknown for 62% of maternity records.

Table 10: SATOD: Status Unknown

	Trust total	**SATOD Unknown (%)**	
UHCW			
2016/17	3009	564	19%
2017/18	7186	1346	19%
2018/19	6940	1437	21%
	17135	**3347**	**20%**
SWFT			

2016/17	2892	103	**4%**
2017/18	2731	60	**2%**
2018/19	3029	44	**1%**
	8652	**207**	**2%**
GEH			
2016/17	2803	1658	59%
2017/18	2865	688	24%
2018/19	2773	563	20%
	8441	2909	**34%**
	25576	**6463**	**25%**

Overall SATOD was unknown for 25% of maternity records. The missing values over the 3-year period were 20% at UHCW, 2% at SWFT and 24% at GEH. This does not accord with nationally reported data – for example unknown SATOD values were reported as follows: CRCCG 1.8% SWCCG 1.8% WNCCG 0.3%

Appendix 12 Data Analysis Additional Tables

Table 12.ia. Smoking Status at Booking by CCG 2016/17[1]

CCG	Bookings	Smoker	% Smoker	Non-Smoker	% Non-Smoker	Unknown	% Unknown	Total Known	% smokers of knowns
CRCCG	2844	420	15%	2329	82%	95	3%	2749	**15%**
SWCCG	2376	220	9%	2005	84%	151	6%	2225	**10%**
WNCCG	2263	320	14%	1499	66%	444	20%	1819	**18%**
Total	**7483**	**960**	**13%**	**5833**	**78%**	**690**	**9%**	**6793**	**14%**

1 UHCW 6 months data only

Table 12.ib. Smoking Status at Booking by CCG by Year 2017/18

CCG	Bookings	Smoker	% Smoker	Non-Smoker	% Non-Smoker	Unknown	% Unknown	Total Known	% smokers of knowns
CRCCG	6416	828	13%	5253	82%	335	5%	6081	**14%**
SWCCG	2446	200	8%	2135	87%	111	5%	2335	**9%**
WNCCG	2485	379	15%	1706	69%	400	16%	2085	**18%**
Total	**11347**	**1407**	**12%**	**9094**	**80%**	**846**	**7%**	**10501**	**13%**

Table 12.ic. Smoking Status at Booking by CCG by Year 2018/19

CCG	Bookings	Smoker	% Smoker	Non-Smoker	% Non-Smoker	Unknown	% Unknown	Total Known	% smokers of knowns
CRCCG	6394	786	12%	5126	80%	482	8%	5912	**13%**
SWCCG	2395	196	8%	2108	88%	91	4%	2304	**9%**
WNCCG	2381	346	15%	1683	71%	352	15%	2029	**17%**
Total	**11170**	**1328**	**12%**	**8917**	**80%**	**925**	**8%**	**10245**	**13%**

Table 12.iia. Smoking Status at Booking by Local Authority 2016/17[1]

Authority	Bookings	Smoker	% Smoker	Non-Smoker	% Non-Smoker	Unknown	% Unknown	Total Known	% smokers of knowns
Coventry	2203	330	15%	1807	82%	66	3%	2137	**15%**
Warwickshire	5280	630	12%	4026	76%	624	12%	4656	**14%**
Total	**7483**	**960**	**13%**	**5833**	**78%**	**690**	**9%**	**6793**	**14%**

1 UHCW 6 months data only

Table 12.iib. Smoking Status at Booking by Local Authority 2017/18

Authority	Bookings	Smoker	% Smoker	Non-Smoker	% Non-Smoker	Unknown	% Unknown	Total Known	% smokers of knowns
Coventry	4994	646	13%	4100	82%	248	5%	4746	**14%**
Warwickshire	6353	761	12%	4994	79%	598	9%	5755	**13%**
Total	**11347**	**1407**	**12%**	**9094**	**80%**	**846**	**7%**	**10501**	**13%**

Table 12.iic. Smoking Status at Booking by Local Authority 2018/19

Authority	Bookings	Smoker	% Smoker	Non-Smoker	% Non-Smoker	Unknown	% Unknown	Total Known	% smokers of knowns
Coventry	4986	643	13%	3971	80%	372	7%	4614	**14%**
Warwickshire	6184	685	11%	4946	80%	553	9%	5631	**12%**
Total	**11170**	**1328**	**12%**	**8917**	**80%**	**925**	**8%**	**10245**	**13%**

Table 12.iii. Smoking at Booking Warwickshire JSNA Areas– 3 years data combined

JSNA Area	Non-smokers		Unknown Status		Smokers		Total
Atherstone and Hartshill	393	74%	47	9%	90	**17%**	530
Bedworth Central and Bulkington	775	67%	211	18%	169	**15%**	1155
Bedworth West	372	62%	155	26%	77	**13%**	604
Bilton and Town Centre	707	81%	58	7%	108	**12%**	873
Coleshill and Arley	314	56%	189	34%	55	**10%**	558
Cubbington, Lillington and Warwick District East	963	87%	50	5%	94	**8%**	1107
Henley, Studley and Alcester	600	89%	20	3%	54	**8%**	674
Hillmorton	449	86%	21	4%	55	**10%**	525
Kenilworth	520	89%	35	6%	27	**5%**	582
Kingsbury	167	45%	182	49%	23	**6%**	372
Leamington, Whitnash and Bishop's Tachbrook	1330	87%	53	3%	139	**9%**	1522
Newbold and Brownsover	812	81%	50	5%	138	**14%**	1000
Nuneaton Central	962	75%	116	9%	212	**16%**	1290
Nuneaton Common and West	972	70%	111	8%	307	**22%**	1390
Polesworth	315	69%	88	19%	52	**11%**	455
Rugby Rural North	499	79%	67	11%	64	**10%**	630
Rugby Rural South	361	83%	30	7%	46	**11%**	437
Southam	499	84%	50	8%	45	**8%**	594
Stratford-upon-Avon	895	85%	53	5%	99	**9%**	1047
Warwick and Warwick District West	912	85%	64	6%	91	**9%**	1067
Weddington, Horestone Grange and Whitestone	614	80%	94	12%	59	**8%**	767
Wellesbourne, Kineton and Shipston	527	85%	28	5%	67	**11%**	622
Unknown JSNA area	8	50%	3	19%	5	**31%**	16
Grand Total	**13966**	**78%**	**1775**	**10%**	**2076**	**12%**	**17817**

Table 12.iv Smoking at Booking Coventry JSNA Areas – 3 years data combined

JSNA Area	Non-smokers		Unknown Status		Smokers		Total
Aspire Family Hub	1263	84%	105	7%	133	**9%**	1501
Families for All Hub	846	81%	67	6%	127	**12%**	1040
Harmony Hub	802	79%	57	6%	162	**16%**	1021
Mosaic Family Hub	1987	85%	110	5%	235	**10%**	2332
Park Edge Family Hub	1224	78%	97	6%	253	**16%**	1574
Pathways Family Hub	2158	81%	144	5%	354	**13%**	2656
The Moat Family Hub	1117	79%	67	5%	222	**16%**	1406
Wood Side Family Hub	476	74%	37	6%	132	**20%**	645
Unknown JSNA area	5	63%	2	25%	1	**13%**	8
Total	**9878**	**81%**	**686**	**6%**	**1619**	**13%**	**12183**

Table 12.v. Warwickshire LSOAs With >=20% Smokers at Booking by JSNA Area
23 LSOAs have a smoking at booking rate >=25%

LSOA Code	LSOA Name	JSNA Area	Bookings	Smokers	% SAB
E01031015	North Warwickshire 003G	Atherstone and Hartshill	17	51	**33%**
E01031010	North Warwickshire 003B	Atherstone and Hartshill	22	80	**28%**
E01031013	North Warwickshire 003E	Atherstone and Hartshill	5	24	**21%**
E01031009	North Warwickshire 003A	Atherstone and Hartshill	20	100	**20%**
E01031063	Nuneaton and Bedworth 013B	Bedworth Central and Bulkington	16	47	**34%**
E01031095	Nuneaton and Bedworth 015A	Bedworth Central and Bulkington	16	66	**24%**
E01031065	Nuneaton and Bedworth 013D	Bedworth Central and Bulkington	14	58	**24%**
E01031096	Nuneaton and Bedworth 015B	Bedworth Central and Bulkington	12	51	**24%**
E01031127	Rugby 007C	Bilton and Town Centre	10	40	**25%**
E01031176	Rugby 011E	Bilton and Town Centre	14	60	**23%**
E01031177	Rugby 011F	Bilton and Town Centre	12	55	**22%**
E01031145	Rugby 009C	Bilton and Town Centre	4	19	**21%**

E01031008	North Warwickshire 005B	Coleshill and Arley	19	69	**28%**
E01031005	North Warwickshire 005A	Coleshill and Arley	11	55	**20%**
E01031273	Warwick 006A	Cubbington, Lillington and Warwick District East	22	69	**32%**
E01031240	Stratford-on-Avon 003B	Henley, Studley and Alcester	2	10	**20%**
E01031163	Rugby 010C	Hillmorton	12	44	**27%**
E01031146	Rugby 009D	Hillmorton	10	40	**25%**
E01031264	Warwick 013D	Leamington, Whitnash and Bishop's Tachbrook	18	67	**27%**
E01031262	Warwick 013B	Leamington, Whitnash and Bishop's Tachbrook	11	41	**27%**
E01031261	Warwick 013A	Leamington, Whitnash and Bishop's Tachbrook	13	61	**21%**
E01031142	Rugby 002F	Newbold and Brownsover	23	76	**30%**
E01031173	Rugby 003C	Newbold and Brownsover	19	90	**21%**
E01031116	Nuneaton and Bedworth 009B	Nuneaton Central	24	77	**31%**
E01031118	Nuneaton and Bedworth 009D	Nuneaton Central	11	44	**25%**
E01031054	Nuneaton and Bedworth 010C	Nuneaton Central	14	59	**24%**
E01031043	Nuneaton and Bedworth 005A	Nuneaton Central	14	64	**22%**
E01031057	Nuneaton and Bedworth 006A	Nuneaton Common and West	23	68	**34%**
E01031092	Nuneaton and Bedworth 007C	Nuneaton Common and West	24	79	30%
E01031090	Nuneaton and Bedworth 007A	Nuneaton Common and West	24	80	30%
E01032890	Nuneaton and Bedworth 002F	Nuneaton Common and West	69	234	29%
E01031074	Nuneaton and Bedworth 002D	Nuneaton Common and West	18	67	27%
E01031075	Nuneaton and Bedworth 002E	Nuneaton Common and West	27	107	25%
E01031093	Nuneaton and Bedworth 007D	Nuneaton Common and West	13	52	25%
E01031094	Nuneaton and Bedworth 007E	Nuneaton Common and West	10	47	21%
E01031073	Nuneaton and Bedworth 002C	Nuneaton Common and West	16	76	21%

E01031058	Nuneaton and Bedworth 006B	Nuneaton Common and West	10	48	21%
E01031165	Rugby 007E	Rugby Rural North	19	62	31%
E01031237	Stratford-on-Avon 011E	Stratford-upon-Avon	8	38	21%
E01031312	Warwick 008D	Warwick and Warwick District West	13	55	24%
E01031311	Warwick 008C	Warwick and Warwick District West	9	41	22%
E01031321	Warwick 011A	Warwick and Warwick District West	11	54	20%
E01031214	Stratford-on-Avon 015C	Wellesbourne, Kineton and Shipston	9	34	26%
E01031249	Stratford-on-Avon 008C	Wellesbourne, Kineton and Shipston	9	42	21%

Table 12.vi. Coventry LSOAs With >=20% Smokers at Booking by JSNA Area
14 LSOAs have a smoking at booking rate >=25%

LSOA Code	LSOA Name	JSNA Area	Bookings	Smokers	% SAB
E01009570	Coventry 015B	Families for All Hub	103	24	**23%**
E01009661	Coventry 028D	Harmony Hub	80	28	**35%**
E01009642	Coventry 031C	Harmony Hub	25	6	**24%**
E01009660	Coventry 021D	Harmony Hub	51	11	**22%**
E01009640	Coventry 024E	Harmony Hub	119	24	**20%**
E01033058	Coventry 042F	Mosaic Family Hub	38	11	**29%**
E01009700	Coventry 029C	Mosaic Family Hub	77	22	**29%**
E01009702	Coventry 029E	Mosaic Family Hub	87	24	**28%**
E01009701	Coventry 029D	Mosaic Family Hub	50	13	**26%**
E01009679	Coventry 036C	Mosaic Family Hub	42	10	**24%**
E01009674	Coventry 029A	Mosaic Family Hub	67	15	**22%**
E01032531	Coventry 036E	Mosaic Family Hub	132	26	**20%**
E01009607	Coventry 004C	Park Edge Family Hub	91	29	**32%**

E01032538	Coventry 001H	Park Edge Family Hub	84	23	**27%**
E01009605	Coventry 004B	Park Edge Family Hub	79	18	**23%**
E01009609	Coventry 005D	Park Edge Family Hub	60	13	**22%**
E01032537	Coventry 001G	Park Edge Family Hub	63	13	**21%**
E01009658	Coventry 021C	Park Edge Family Hub	60	12	**20%**
E01009631	Coventry 020C	Pathways Family Hub	49	15	**31%**
E01009651	Coventry 031D	Pathways Family Hub	75	19	**25%**
E01009531	Coventry 010D	Pathways Family Hub	41	10	**24%**
E01009622	Coventry 012A	Pathways Family Hub	74	18	**24%**
E01032587	Coventry 043E	Pathways Family Hub	63	14	**22%**
E01009581	Coventry 007C	The Moat Family Hub	57	20	**35%**
E01009718	Coventry 019E	The Moat Family Hub	75	21	**28%**
E01009579	Coventry 007B	The Moat Family Hub	128	33	**26%**
E01009709	Coventry 007F	The Moat Family Hub	43	10	**23%**
E01009710	Coventry 013C	The Moat Family Hub	55	11	**20%**
E01009540	Coventry 039B	Wood Side Family Hub	99	37	**37%**
E01009539	Coventry 039A	Wood Side Family Hub	75	20	**27%**
E01009537	Coventry 035C	Wood Side Family Hub	48	10	**21%**
E01009542	Coventry 039D	Wood Side Family Hub	94	19	**20%**

Table 12.vii. Coventry and Warwickshire Bookings and Smokers by Deprivation Decile

Deprivation Decile	All Bookings	% All Bookings by Decile	C&W Smokers	% All Smokers by Decile	% Bookings in Decile that Smoke
1	3171	11%	700	19%	22%
2	2888	10%	525	14%	18%
3	3527	12%	602	16%	17%
4	2888	10%	395	11%	14%
5	3187	11%	382	10%	12%
6	3403	11%	362	10%	11%
7	3248	11%	252	7%	8%
8	3282	11%	229	6%	7%
9	2398	8%	155	4%	6%
10	1984	7%	87	2%	4%
Unknown	24	0%	6	0%	25%
Total	**30000**		**3695**	**12%**	

Table 12.viii. Proportion of Total Population by IMD Decile for Coventry and Warwickshire

Deprivation Deciles	1	2	3	4	5	6	7	8	9	10	Total
Coventry	15%	11%	16%	13%	12%	10%	8%	7%	5%	4%	**100%**
Warwickshire	2%	5%	7%	8%	10%	14%	14%	16%	13%	12%	**100%**

Table 12.ix .Proportion of Total Population by IMD Decile for Coventry and Warwickshire

Deprivation Deciles	1	2	3	4	5	6	7	8	9	10	Total Population
Coventry	53910	40962	56920	47457	42562	36841	29247	27476	17059	14351	**366785**
North Warwickshire	1597	2216	4371	8717	11799	8160	16331	6627	5032		**64850**
Nuneaton and Bedworth	9997	18642	20549	20185	9930	15420	9640	9882	5499	9158	**128902**
Rugby		4068	8317	6717	10894	19955	9360	13446	17523	16914	**107194**
Stratford-on-Avon			1310	5386	6376	23382	25478	34825	16953	13870	**127580**
Warwick		1334	6548	4202	17420	12471	21722	23759	29079	25949	**142484**
Total	**65504**	**67222**	**98015**	**92664**	**98981**	**116229**	**111778**	**116015**	**91145**	**80242**	**937795**

Table 12.x. Consultant vs Maternity-led care by Trust.

UHCW Bookings	Non-smoker	% Non-smoker	Smoker	% Smoker	Unknown	%Unknown	Total
Total	4644		1026		1150		**6820**
Consultant	6481	51%	1260	62%	544	51%	**8285**
Maternity	6118	48%	747	37%	414	39%	**7279**
Unknown	161	1%	28	1%	104	10%	**293**

SWFT Bookings	Non-smoker	% Non-smoker	Smoker	% Smoker	Unknown	%Unknown	Total
Total	6440		634		249		7323
Consultant	3942	61%	509	80%	160	64%	4611
Maternity	2403	37%	121	19%	83	33%	2607
Unknown	95	1%	4	1%	6	2%	105

GEH Bookings	Non-smoker	% Non-smoker	Smoker	% Smoker	Unknown	%Unknown	Total
Total	4644		1026		1150		6820
Consultant	2888	62%	765	75%	701	61%	4354
Maternity	1742	38%	258	25%	447	39%	2447
Unknown	14	0%	3	0%	2	0%	19

Table 12.xi. Coventry and Warwickshire Smokers and Proportion with CO Measurement Maternity at Booking by Districts and Boroughs

	2016/17			2017/18			2018/19		
	Total Number of bookings	Number (%) with CO measurement	Number (%) Smoking	Number of bookings	Number (%) with CO measurement	Number (%) Smoking	Number of bookings	Number (%) with CO measurement	Number (%) Smoking
Coventry	2203[1]	1963 (89)	330 (15)	4994	4246 (85)	646 (14)	4986	4097 (82.2)	643 (14)
Rugby	641[1]	523 (82)	90 (15)	1422	1277 (90)	182 (14)	1408	1220 (86.6)	143 (11)
Warwick	1390	1134 (82)	125 (9)	1485	1204 (81)	114 (8)	1405	1194 (85)	112 (8)
Stratford Upon Avon	986	646 (65)	95 (11)	961	754 (78)	86 (9)	990	829 (84)	84 (9)
Warwickshire North	645	381 (59)	61 (14)	660	464 (70)	91 (18)	610	832 (71)	68 (14)

Nuneaton & Bedworth	1618	1215 (75)	259 (19)	1825	1478 (81)	288 (18)	1771	1397 (79)	)

1 UHCW 6 months data only

Table 12.xiia. SATOD Status by CCG Population 2016/17

CCG	Number with outcome	SATOD =YES	% Smoker	SATOD =NO	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
CRCCG1	2385	295	12%	2008	84%	82	3%	2303	**12.8%**
SWCCG	2350	162	7%	2103	89%	85	4%	2265	**7.1%**
WNCCG	1695	153	9%	855	50%	687	41%	1008	**15.2%**
Total	**6430**	**610**	**9%**	**4966**	**77%**	**854**	**13%**	**5576**	**10.9%**

1 UHCW 6 months data only

Table 12.xiib. SATOD Status by CCG Population 2017/18

CCG	Number with outcome	SATOD =YES	% Smoker	SATOD =NO	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
CRCCG	5376	571	11%	4738	88%	67	1%	5309	**10.7%**
SWCCG	2396	171	7%	2172	91%	53	2%	2343	**7.3%**
WNCCG	1922	259	13%	1660	86%	3	0%	1919	**13.5%**
Total	**9694**	**1001**	**10%**	**8570**	**88%**	**123**	**1%**	**9571**	**10.5%**

Table 12.xiic. SATOD Status by CCG Population 2018/19

CCG	Number with outcome	SATOD =YES	% Smoker	SATOD =NO	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
CRCCG	5383	571	11%	4657	87%	155	3%	5228	**10.9%**
SWCCG	2362	150	6%	2171	92%	41	2%	2321	**6.5%**
WNCCG	1899	259	14%	1627	86%	13	1%	1886	**13.7%**
Total	**9644**	**980**	**10%**	**8455**	**88%**	**209**	**2%**	**9435**	**10.4%**

Table 12.xiiia. SATOD Status by Local Authority Population 2016/17

Local Authority	Number with outcome	SATOD =YES	% Smoker	SATOD =NO	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Coventry[1]	1832	239	13%	1543	84%	50	3%	1782	**13.4%**
Warwickshire	4598	371	8%	3423	74%	804	17%	3794	**9.8%**
Total	**6430**	**610**	**9%**	**4966**	**77%**	**854**	**13%**	**5576**	**10.9%**

1 UHCW 6 months data only

Table 12.xiiib. SATOD Status by Local Authority Population 2017/18

Local Authority	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Coventry	4202	453	11%	3695	88%	54	1%	4148	**10.9%**
Warwickshire	5492	548	10%	4875	89%	69	1%	5423	**10.1%**
Total	**9694**	**1001**	**10%**	**8570**	**88%**	**123**	**1%**	**9571**	**10.4%**

Table 12.xiiic. SATOD Status by Local Authority Population 2018/19

Local Authority	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Coventry	4209	464	11%	3621	86%	124	3%	4085	**11.3%**
Warwickshire	5435	516	9%	4834	89%	85	2%	5350	**9.6%**
Total	**9644**	**980**	**10%**	**8455**	**88%**	**209**	**2%**	**9435**	**10.4%**

Table 12.xiva. SATOD Status by District and Borough Populations 2016/17

Authority	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Coventry[1]	1832[1]	239	13%	1543	84%	**50**	3%	1782	**13%**
North Warwickshire	399	27	7%*****	202	51%	170	43%	229	**12%**
Nuneaton & Bedworth	1296	126	10%*****	653	50%	517	40%	779	**16%**
Rugby[1]	553[1]	56	10%	465	84%	32	6%	521	**11%**
Stratford-on-Avon	978	68	7%	873	89%	37	4%	941	**7%**
Warwick	1372	94	7%	1230	90%	48	3%	1324	**7%**
Total	**6430**	**610**	**9%**	**4966**	**77%**	**854**	**13%**	**5576**	**11%**

***NB High level of unknowns.** **[1] UHCW 6 months data only**

Table 12. xivb. SATOD Status by District and Borough Populations 2017/18

Authority	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Coventry	4202	453	11%	3695	88%	54	1%	4148	**11%**
North Warwickshire	472	63	13%	409	87%		0%	472	**13%**
Nuneaton & Bedworth	1450	196	14%	1251	86%	3	0%	1447	**14%**
Rugby	1174	118	10%	1043	89%	13	1%	1161	**10%**
Stratford-on-Avon	947	73	8%	848	90%	26	3%	921	**8%**
Warwick	1449	98	7%	1324	91%	27	2%	1422	**7%**
Total	**9694**	**1001**	**10%**	**8570**	**88%**	**123**	**1%**	**9571**	**10%**

Table 12.xivc. SATOD Status by District and Borough Populations 2018/19

Authority	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Coventry	4209	464	11%	3621	86%	124	3%	4085	**11%**
North Warwickshire	434	40	9%	391	90%	3	1%	431	**9%**
Nuneaton & Bedworth	1465	219	15%	1236	84%	10	1%	1455	**15%**
Rugby	1174	107	9%	1036	88%	31	3%	1143	**9%**
Stratford-on-Avon	980	65	7%	897	92%	18	2%	962	**7%**
Warwick	1382	85	6%	1274	92%	23	2%	1359	**6%**
Total	**9644**	**980**	**10%**	**8455**	**88%**	**209**	**2%**	**9435**	**10%**

Table 12.xva. SATOD Status by Coventry JSNA Populations 2016/17[1]

JSNA	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Aspire Family Hub	222	24	11%	195	88%	3	1%	219	**11%**
Families for All Hub	148	14	9%	127	86%	7	5%	141	**10%**
Harmony Hub	135	24	18%	107	79%	4	3%	131	**18%**
Mosaic Family Hub	351	31	9%	311	89%	9	3%	342	**9%**
Park Edge Family Hub	241	39	16%	195	81%	7	3%	234	**17%**
Pathways Family Hub	412	52	13%	345	84%	15	4%	397	**13%**
The Moat Family Hub	229	37	16%	188	82%	4	2%	225	**16%**
Wood Side Family Hub	94	18	19%	75	80%	1	1%	93	**19%**
Total	**1832**	**239**	**13%**	**1543**	**84%**	**50**	**3%**	**1782**	**13%**

[1] **UHCW 6 months data**

Table 12.xvb. SATOD Status by Coventry JSNA Populations 2017/18

JSNA	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Aspire Family Hub	514	42	8%	463	90%	9	2%	505	**8%**
Families for All Hub	366	30	8%	330	90%	6	2%	360	**8%**
Harmony Hub	367	45	12%	322	88%		0%	367	**12%**
Mosaic Family Hub	766	62	8%	695	91%	9	1%	757	**8%**
Park Edge Family Hub	554	68	12%	479	86%	7	1%	547	**12%**
Pathways Family Hub	915	98	11%	803	88%	14	2%	901	**11%**
The Moat Family Hub	480	61	13%	415	86%	4	1%	476	**13%**
Wood Side Family Hub	238	46	19%	187	79%	5	2%	233	**20%**
Not Known	2	1	50%	1	50%		0%	2	**50%**
Total	**4202**	**453**	**11%**	**3695**	**88%**	**54**	**1%**	**4148**	**11%**

Table 12.xvc. SATOD Status by Coventry JSNA Populations 2018/19

JSNA	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Aspire Family Hub	496	29	6%	446	90%	21	4%	475	**6%**
Families for All Hub	369	42	11%	314	85%	13	4%	356	**12%**
Harmony Hub	369	49	13%	310	84%	10	3%	359	**14%**
Mosaic Family Hub	790	65	8%	710	90%	15	2%	775	**8%**
Park Edge Family Hub	545	86	16%	441	81%	18	3%	527	**16%**
Pathways Family Hub	898	94	10%	784	87%	20	2%	878	**11%**
The Moat Family Hub	495	63	13%	416	84%	16	3%	479	**13%**
Wood Side Family Hub	244	35	14%	198	81%	11	5%	233	**15%**
Not Known	3	1	33%	2	67%		0%	3	**33%**
Total	**4209**	**464**	**11%**	**3621**	**86%**	**124**	**3%**	**4085**	**11%**

Table 12.xvd. SATOD for Coventry JSNA Populations 2016/17-2018/19

JSNA	Number in Cohort	Total SATOD Known	SATOD =Yes	% Smoker
Aspire Family Hub	1232	1199	95	**8%**
Families for All Hub	883	857	86	**10%**
Harmony Hub	871	857	118	**14%**
Mosaic Family Hub	1907	1874	158	**8%**
Park Edge Family Hub	1340	1308	193	**15%**
Pathways Family Hub	2225	2176	244	**11%**
The Moat Family Hub	1204	1180	161	**14%**
Wood Side Family Hub	576	559	99	**18%**
Not Known	5	5	2	**40%**
Total	**10243**	**10015**	**1156**	**12%**

Table 12.xvia. SATOD Status[1] by Warwickshire JSNA Populations 2016/17[2]

JSNA	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Atherstone and Hartshill	141	11	8%	61	43%	69	49%	72	**15%**
Bedworth Central and Bulkington	258	26	10%	138	53%	94	36%	164	**16%**
Bedworth West	124	23	19%	67	54%	34	27%	90	**26%**
Bilton and Town Centre	143	18	13%	119	83%	6	4%	137	**13%**
Coleshill and Arley	92	7	8%	51	55%	34	37%	58	**12%**
Cubbington, Lillington and Warwick District East	359	19	5%	325	91%	15	4%	344	**6%**
Henley, Studley and Alcester	221	13	6%	201	91%	7	3%	214	**6%**
Hillmorton	84	9	11%	75	89%		0%	84	**11%**
Kenilworth	180	7	4%	168	93%	5	3%	175	**4%**
Kingsbury	60	4	7%	31	52%	25	42%	35	**11%**
Leamington, Whitnash and Bishop's Tachbrook	466	42	9%	405	87%	19	4%	447	**9%**
Newbold and Brownsover	150	16	11%	124	83%	10	7%	140	**11%**
Nuneaton Central	352	36	10%	163	46%	153	43%	199	**18%**
Nuneaton Common and West	371	39	11%	174	47%	158	43%	213	**18%**
Polesworth	106	5	5%	59	56%	42	40%	64	**8%**

Rugby Rural North	104	6	6%	82	79%	16	15%	88	**7%**
Rugby Rural South	71	6	8%	65	92%		0%	71	**8%**
Southam	198	12	6%	181	91%	5	3%	193	**6%**
Stratford-upon-Avon	349	27	8%	306	88%	16	5%	333	**8%**
Warwick and Warwick District West	366	26	7%	331	90%	9	2%	357	**7%**
Weddington, Horestone Grange and Whitestone	191	2	1%	111	58%	78	41%	113	**2%**
Wellesbourne, Kineton and Shipston	210	16	8%	185	88%	9	4%	201	**8%**
Not Known	2	1	50%	1	50%		0%	2	**50%**
Total	**4598**	**371**	**8%**	**3423**	**74%**	**804**	**17%**	**3794**	**10%**

[1] High unknown SATOD values North Warwickshire 2016/17 [2] UHCW 6 months data

Table 12.xvib. SATOD Status by Warwickshire JSNA Populations 2017/18

JSNA	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Atherstone and Hartshill	166	31	19%	135	81%		0%	166	**19%**
Bedworth Central and Bulkington	298	38	13%	258	87%	2	1%	296	**13%**
Bedworth West	146	16	11%	130	89%		0%	146	**11%**
Bilton and Town Centre	301	35	12%	262	87%	4	1%	297	**12%**
Coleshill and Arley	135	17	13%	118	87%		0%	135	**13%**
Cubbington, Lillington and Warwick District East	355	29	8%	321	90%	5	1%	350	**8%**
Henley, Studley and Alcester	201	17	8%	178	89%	6	3%	195	**9%**
Hillmorton	183	18	10%	164	90%	1	1%	182	**10%**
Kenilworth	204	7	3%	192	94%	5	2%	199	**4%**
Kingsbury	54	3	6%	51	94%		0%	54	**6%**
Leamington, Whitnash and Bishop's Tachbrook	532	41	8%	485	91%	6	1%	526	**8%**
Newbold and Brownsover	338	31	9%	305	90%	2	1%	336	**9%**
Nuneaton Central	377	50	13%	327	87%		0%	377	**13%**
Nuneaton Common and West	408	85	21%	322	79%	1	0%	407	**21%**
Polesworth	117	12	10%	105	90%		0%	117	**10%**

Rugby Rural North	200	20	10%	176	88%	4	2%	196	**10%**
Rugby Rural South	149	13	9%	134	90%	2	1%	147	**9%**
Southam	196	13	7%	174	89%	9	5%	187	**7%**
Stratford-upon-Avon	346	30	9%	311	90%	5	1%	341	**9%**
Warwick and Warwick District West	358	21	6%	326	91%	11	3%	347	**6%**
Weddington, Horestone Grange and Whitestone	218	6	3%	212	97%		0%	218	**3%**
Wellesbourne, Kineton and Shipston	204	13	6%	185	91%	6	3%	198	**7%**
Not Known	6	2	33%	4	67%		0%	6	**33%**
Total	**5492**	**548**	**10%**	**4875**	**89%**	**69**	**1%**	**5423**	**10%**

Table 12.xvic. SATOD Status by Warwickshire JSNA Populations 2018/19

JSNA	Number with outcome	SATOD =Yes	% Smoker	SATOD =No	% Non-Smoker	Unknown SATOD	% Unknown	Total SATOD Known	% SATOD Known
Atherstone and Hartshill	139	18	13%	121	87%		0%	139	**13%**
Bedworth Central and Bulkington	331	51	15%	274	83%	6	2%	325	**16%**
Bedworth West	174	24	14%	148	85%	2	1%	172	**14%**
Bilton and Town Centre	295	23	8%	265	90%	7	2%	288	**8%**
Coleshill and Arley	114	7	6%	107	94%		0%	114	**6%**
Cubbington, Lillington and Warwick District East	376	22	6%	345	92%	9	2%	367	**6%**
Henley, Studley and Alcester	247	13	5%	229	93%	5	2%	242	**5%**
Hillmorton	180	15	8%	159	88%	6	3%	174	**9%**
Kenilworth	175	5	3%	168	96%	2	1%	173	**3%**
Kingsbury	66	5	8%	60	91%	1	2%	65	**8%**
Leamington, Whitnash and Bishop's Tachbrook	498	39	8%	452	91%	7	1%	491	**8%**
Newbold and Brownsover	340	41	12%	290	85%	9	3%	331	**12%**
Nuneaton Central	344	51	15%	293	85%		0%	344	**15%**
Nuneaton Common and West	407	71	17%	334	82%	2	0%	405	**18%**
Polesworth	115	10	9%	103	90%	2	2%	113	**9%**

Rugby Rural North	218	16	7%	195	89%	7	3%	211	**8%**
Rugby Rural South	141	12	9%	127	90%	2	1%	139	**9%**
Southam	187	10	5%	174	93%	3	2%	184	**5%**
Stratford-upon-Avon	346	20	6%	323	93%	3	1%	343	**6%**
Warwick and Warwick District West	332	19	6%	308	93%	5	2%	327	**6%**
Weddington, Horestone Grange and Whitestone	208	22	11%	186	89%		0%	208	**11%**
Wellesbourne, Kineton and Shipston	200	22	11%	171	86%	7	4%	193	**11%**
Not Known	2		0%	2	100%		0%	2	**0%**
Total	**5435**	**516**	**9%**	**4834**	**89%**	**85**	**2%**	**5350**	**10%**

Table 12.xvid. SATOD for Warwickshire JSNA Populations 2016/17-2018/19

JSNA	Number in Cohort	Total SATOD Known	SATOD =Yes	% Smoker
Atherstone and Hartshill	446	377	60	**16%**
Bedworth Central and Bulkington	887	785	115	**15%**
Bedworth West	444	408	63	**15%**
Bilton and Town Centre	739	722	76	**11%**
Coleshill and Arley	341	307	31	**10%**
Cubbington, Lillington and Warwick District East	1090	1061	70	**7%**
Henley, Studley and Alcester	669	651	43	**7%**
Hillmorton	447	440	42	**10%**
Kenilworth	559	547	19	**3%**
Kingsbury	180	154	12	**8%**
Leamington, Whitnash and Bishop's Tachbrook	1496	1464	122	**8%**
Newbold and Brownsover	828	807	88	**11%**
Nuneaton Central	1073	920	137	**15%**
Nuneaton Common and West	1186	1025	195	**19%**
Polesworth	338	294	27	**9%**
Rugby Rural North	522	495	42	**8%**
Rugby Rural South	361	357	31	**9%**
Southam	581	564	35	**6%**
Stratford-upon-Avon	1041	1017	77	**8%**
Warwick and Warwick District West	1056	1031	66	**6%**
Weddington, Horestone Grange and Whitestone	617	539	30	**6%**
Wellesbourne, Kineton and Shipston	614	592	51	**9%**
Not Known	10	10	3	**30%**
Total	**15525**	**14567**	**1435**	**10%**

Table 12.xvii. Warwickshire LSOAs With >=20% Smokers at Delivery by JSNA Area
Eleven LSOAs have SATOD >=25%

LSOA Code	LSOA Name	JSNA Area	Bookings	Smokers	% SATOD
E01031010	North Warwickshire 003B	Atherstone and Hartshill	70	17	**24%**
E01031015	North Warwickshire 003G	Atherstone and Hartshill	44	9	**20%**
E01031013	North Warwickshire 003E	Atherstone and Hartshill	20	4	**20%**
E01031063	Nuneaton and Bedworth 013B	Bedworth Central and Bulkington	38	14	**37%**
E01031095	Nuneaton and Bedworth 015A	Bedworth Central and Bulkington	52	14	**27%**
E01031096	Nuneaton and Bedworth 015B	Bedworth Central and Bulkington	41	9	**22%**
E01031067	Nuneaton and Bedworth 014A	Bedworth Central and Bulkington	34	7	**21%**
E01031077	Nuneaton and Bedworth 018A	Bedworth West	83	20	**24%**
E01031145	Rugby 009C	Bilton and Town Centre	16	4	**25%**
E01031144	Rugby 009B	Bilton and Town Centre	30	7	**23%**
E01031273	Warwick 006A	Cubbington, Lillington and Warwick District East	68	18	**26%**
E01031146	Rugby 009D	Hillmorton	34	9	**26%**
E01031163	Rugby 010C	Hillmorton	38	10	**26%**
E01031264	Warwick 013D	Leamington, Whitnash and Bishop's Tachbrook	67	14	**21%**
E01031261	Warwick 013A	Leamington, Whitnash and Bishop's Tachbrook	61	12	**20%**
E01031142	Rugby 002F	Newbold and Brownsover	70	17	**24%**
E01031116	Nuneaton and Bedworth 009B	Nuneaton Central	64	20	**31%**
E01031117	Nuneaton and Bedworth 009C	Nuneaton Central	47	11	**23%**
E01031090	Nuneaton and Bedworth 007A	Nuneaton Common and West	66	18	**27%**
E01031057	Nuneaton and Bedworth 006A	Nuneaton Common and West	63	16	**25%**
E01031092	Nuneaton and Bedworth 007C	Nuneaton Common and West	63	16	**25%**

E01032890	Nuneaton and Bedworth 002F	Nuneaton Common and West	200	50	**25%**
E01031094	Nuneaton and Bedworth 007E	Nuneaton Common and West	45	9	**20%**
E01031165	Rugby 007E	Rugby Rural North	55	13	**24%**
E01031181	Rugby 004E	Rugby Rural South	54	11	**20%**
E01031214	Stratford-on-Avon 015C	Wellesbourne, Kineton and Shipston	34	7	**21%**

Table 12.xviii. Coventry LSOAs With >=20% Smokers at Delivery by JSNA Area
Four LSOAs have SATOD >=25%

LSOA Code	LSOA Name	JSNA Area	Deliveries	Smokers	% SATOD
E01009570	Coventry 015B	Families for All Hub	86	17	**20%**
E01009642	Coventry 031C	Harmony Hub	11	3	**27%**
E01009702	Coventry 029E	Mosaic Family Hub	76	19	**25%**
E01009700	Coventry 029C	Mosaic Family Hub	62	13	**21%**
E01032538	Coventry 001H	Park Edge Family Hub	67	16	**24%**
E01009605	Coventry 004B	Park Edge Family Hub	65	14	**22%**
E01009623	Coventry 012B	Pathways Family Hub	58	12	**21%**
E01009622	Coventry 012A	Pathways Family Hub	64	13	**20%**
E01009631	Coventry 020C	Pathways Family Hub	45	9	**20%**
E01009581	Coventry 007C	The Moat Family Hub	50	14	**28%**
E01009718	Coventry 019E	The Moat Family Hub	65	18	**28%**
E01009579	Coventry 007B	The Moat Family Hub	107	25	**23%**
E01009585	Coventry 007E	The Moat Family Hub	103	22	**21%**
E01009537	Coventry 035C	Wood Side Family Hub	46	9	**20%**

Table 12.xixa. SATOD for Smokers at Booking by District and Borough Populations 2016/17

Authority	Smokers at Booking	SATOD =Yes	% SATOD=Y	SATOD =No	% SATOD=N	Unknown SATOD	% Unknown
Coventry	282[1]	219	78%	59	21%	4	1%
North Warwickshire	52	23	44%*	11	21%	18	35%
Nuneaton & Bedworth	223	110	49%*	33	15%	80	36%
Rugby	72[1]	52	72%	16	22%	4	6%
Stratford-on-Avon	95	63	66%	28	29%	4	4%
Warwick	123	79	64%	39	32%	5	4%
Total	**847**	**546**	**64%**	**186**	**22%**	**115**	**14%**

***NB High number of SATOD unknown. [1] UHCW 6 months data**

Table 12. xixb. SATOD for Smokers at Booking by District and Borough Populations 2017/18

Authority	Smokers at Booking	SATOD =Yes	% SATOD=Y	SATOD =No	% SATOD=N	Unknown SATOD	% Unknown
Coventry	554	356	64%	192	35%	6	1%
North Warwickshire	77	52	68%	25	32%		0%
Nuneaton and Bedworth	246	175	71%	71	29%		0%
Rugby	152	104	68%	47	31%	1	1%
Stratford-on-Avon	86	61	71%	23	27%	2	2%
Warwick	110	80	73%	27	25%	3	3%
Total	**1225**	**828**	**68%**	**385**	**31%**	**12**	**1%**

Table 12.xixc. SATOD for Smokers at Booking by District and Borough Populations 2018/19

Authority	Smokers at Booking	SATOD =Yes	% SATOD=Y	SATOD =No	% SATOD=N	Unknown SATOD	% Unknown
Coventry	533	385	72%	129	24%	19	4%
North Warwickshire	56	40	71%	16	29%		0%
Nuneaton and Bedworth	238	187	79%	50	21%	1	0%
Rugby	125	85	68%	37	30%	3	2%
Stratford-on-Avon	82	56	68%	25	30%	1	1%
Warwick	110	72	65%	35	32%	3	3%
Total	**1144**	**825**	**72%**	**292**	**26%**	**27**	**2%**

Table 12.xx SATOD=Yes for Non-smokers and Unknown at Booking by District and Borough Populations

Authority	Number with outcome	Non-smoker or Unknown at Booking	SATOD=Y	% SATOD=Y
Coventry	10243	8874	196	2%
North Warwickshire	1305	1120	15	1%
Nuneaton and Bedworth	4211	3504	69	2%
Rugby	2901	2552	40	2%
Stratford-on-Avon	2905	2642	26	1%
Warwick	4203	3860	46	1%
Total	**25768**	**22552**	**392**	**2%**

Table 12.xxi. Smokers, Non-smokers and Unknown Smoking Status Gestation and Birthweight by Trust and Total

	Births			Gestation in weeks					Birthweight (kg)			
	Live	Still	Total	<=24	25-27	28-32	33-36	>37	<1.5	1.5-2.4	2.5-3.9	>4.0
UHCW Smokers	1885	9	1894	15	18	60	218	1589	71	249	1511	68
SWFT Smokers	710	7	717	5	2	12	66	637	12	89	590	29
Total smokers	**2595**	**16**	**2611**	**20**	**20**	**72**	**284**	**2226**	**83**	**338**	**2101**	**97**
UHCW Non Smokers	16031	64	16095	61	88	276	1232	14460	327	1101	13254	1435
SWFT Non Smokers	10429	21	10450	38	3	51	454	9939	47	384	8701	1342
Total non-smokers	**26460**	**85**	**26545**	**99**	**91**	**327**	**1686**	**24399**	**374**	**1485**	**21955**	**2777**
UHCW Unknown	628	8	636	8	8	22	66	501	30	60	458	40
SWFT Unknown	211	2	213	9	0	3	9	201	5	8	172	29
Total Unknown	**839**	**10**	**849**	**17**	**8**	**25**	**75**	**702**	**35**	**68**	**630**	**69**

Appendix 13 Data items Included in Maternity Case Note Audit

At Booking
Smoking status recorded (Y or N)
Recorded as smoker (Y or N)
CO level (value ppm)
Smoking advice documented (Y or N)
Smoking referral documented (Y or N)
Documented that written info given (Y or N)
Documented evidence of enquiry about partner/household smoking (Y or N)

Subsequent appointments
(could be midwife, consultant, scan or other maternity appointment – so could be several different appointments per patient, but only to be recorded if any of the following smoking related details or interventions are documented)
Appointment date
Smoking status recorded (Y or N)
Recorded as a smoker (Y or N)
CO level (value ppm)
Smoking advice documented (Y or N)
Smoking referral documented (Y or N)
Risk Perception offered (Y or N)
Risk Perception delivered (Y or N)
Growth scan provided

36 Weeks
Smoking status recorded (Y or N)
Recorded as a smoker (Y or N)
CO level not recorded , CO level (value ppm)

At time of delivery
Smoking status recorded (Y or N)
Recorded as a smoker (Y or N)

Appendix 14 Health Visitor Case Note Review Data Items

Notification
Notification received (Y or N)
Did notification include smoking status (Y or N)
Did notification include previous smoking referral information (Y or N)

Antenatal appointment
Antenatal appointment offered (Y or N)
Reason if 'No'

Antenatal appointment received (Y or N)
Reason if 'No'

Antenatal appoint received:
Was the current smoking status of the woman recorded by HV (Y or N)?
CO level (value ppm)- ie this may not be included if CO monitoring is not available
Recorded as smoker (Y or N)

If smoker = Y

- Smoking advice documented (Y or N)
- Smoking referral documented (Y or N)
- Documented that written info given (Y or N)
- Is the woman documented as using e-cigarette as well as smoking (Y or N)?

If smoker = N
For women who have quit smoking in pregnancy

- Documentation of 'relapse prevention' discussion
- Is the woman documented as using e-cigarette (Y or N)?

For all women (Smoker = Y or Smoker =N)

- Documented evidence of enquiry about partner/household smoking (Y or N)
- Any signposting to SSS for partner/household members?
- Dangers of secondary smoke advice documented (Y or N)
- Is the woman documented as using e-cigarette (Y or N)?

Post-natal at 14 day and 6 to 8-week checks
Smoking status of woman recorded (Y or N)
Recorded as smoker (Y or N)
CO level (value ppm)- ie this may not be included if CO monitoring is not available

(i) For smokers:

- Smoking advice documented (Y or N)
- Smoking referral documented (Y or N)
- Documented that written info given (Y or N)
- Is the woman documented as using e-cigarette as well as smoking (Y or N)?
- Had this woman quit in pregnancy (ie relapsed)?

(ii) For non-smokers:

- Documentation of ‘relapse prevention’ discussion where woman is still quit
- Is the woman documented as using e-cigarette (Y or N)?

(iii) For all women

- Documented evidence of enquiry about partner/household smoking (Y or N)
- Any signposting to SSS for partner/household members?
- Dangers of secondary smoke advice documented (Y or N)
- Is the woman documented as using e-cigarette (Y or N)?
- Breast feeding (Y or N or Partial)

Appendix 15 FNP Case Note Review Data Items

Case Note Review:
50 consecutive records of those in receipt of the FNP programme. Start date for identification of records TBC (ie to allow for 50 clients to have received the one year post-natal check by November 2019).

Data Items at First FNP assessment:
Smoking status – response to 'ever smoker' (Y or N)
Smoking status at FNP assessment - smoker (Y or N)

For smokers:
- Smoking advice documented (Y or N)
- Smoking referral documented (Y or N)
- Documented that written info given (Y or N)
- Is the client smoking other substances as well as tobacco?
- Is the client documented as using e-cigarette as well as smoking (Y or N)?

For clients who have quit smoking in pregnancy
- Documentation of 'relapse prevention' discussion
- Is the client documented as using e-cigarette (Y or N)?

For all clients
- Documented evidence of enquiry about partner/household smoking (Y or N)
- Dangers of secondary smoke advice documented (Y or N)
- Any referrals/signposting to SSS for partner/household members?
- Is the client documented as using e-cigarette (Y or N)?

At any assessment visit
Smoking status documented - smoker (Y or N)
For smokers:
- Smoking advice documented (Y or N)
- Smoking referral documented (Y or N)
- Documented that written info given (Y or N)
- Is the client documented as using e-cigarette as well as smoking (Y or N)?

For clients who have quit smoking in pregnancy
- Documentation of 'relapse prevention' discussion
- Is the client documented as using e-cigarette (Y or N)?

For all clients
- Documented evidence of enquiry about partner/household smoking (Y or N)
- Dangers of secondary smoke advice documented (Y or N)
- Any referrals to SSS for partner/household members?
- Is the client documented as using e-cigarette (Y or N)?

At 36-week assessment, at 6 week post-natal and one-year assessment:
Smoking status documented - smoker (Y or N)
CO level (value ppm)- ie this may not be included if CO monitoring is not available

For smokers:

- Smoking advice documented (Y or N)
- Smoking referral documented (Y or N)
- Documented that written info given (Y or N)
- Is the client documented as using e-cigarette as well as smoking (Y or N)?

For clients who have quit smoking in pregnancy

- Documentation of ‘relapse prevention’ discussion
- Is the client documented as using e-cigarette (Y or N)?

For all clients

- Documented evidence of enquiry about partner/household smoking (Y or N)
- Dangers of secondary smoke advice documented (Y or N)
- Any referrals to SSS for partner/household members?
- Is the client documented as using e-cigarette (Y or N)?(

Appendix 16 Smoking in Pregnancy Survey for Maternity Staff

Trust:
Please select all that apply
☐ George Eliot Hospital
☐ South Warwickshire Foundation Trust
☐ University Hospital Coventry and Warwickshire
☐ Other (Please state)

_____

Profession:
☐ Midwife
☐ Maternity or Clinical Support Worker
☐ Sonographer
☐ Obstetrician
☐ Administrative staff
☐ Student midwife
☐ Medical student
☐ Other (please state)

_____

Usual area of work:
☐ Community
☐ Antenatal clinic
☐ Antenatal assessment unit
☐ Ultrasound
☐ Antenatal ward
☐ Postnatal ward
☐ Labour ward
☐ Foetal medicine
☐ Other (please state)

_____

1. **In your current role how important is it that you offer pregnant women advice on smoking in pregnancy?**

Please rate on a scale of 1 to 5 – where 1 is unimportant and 5 is very important

1	**2**	**3**	**4**	**5**
Not important	Slightly Important	Moderately Important	Important	Very important

2. **Have you received training in the last 3 years to enable you to deliver Smoking in Pregnancy advice?**

Please select one of the following options
☐ I have received training within the last year
☐ I have received training within the last two years
☐ I have received training within the last three years
☐ It is more than 3 years since I received training
☐ I have never received training
☐ Unsure

3. **Using a scale of 1 to 5 please rate your level of agreement with the following statements:**

3a. I have all the knowledge I need to deliver advice to pregnant women who smoke

1	**2**	**3**	**4**	**5**
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

3b. I have all the confidence required to engage pregnant smokers in a motivational conversation

1	**2**	**3**	**4**	**5**
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

4. **Have you been trained to undertake Carbon Monoxide (CO) monitoring?**

Please select one of the following options:

☐ Yes – I have received training
☐ No – I have not received training
☐ Unsure

5. **Using a scale of 1 to 5 please rate your level of agreement with the following statement:**

I am confident to advise a pregnant woman about her CO result

1	**2**	**3**	**4**	**5**
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

6. **When a woman has a CO level of 4ppm or above but claims not to be a smoker what do you do?**

Please tick all that apply

☐ Explain what a CO value is and why it might be raised
☐ Provide the woman with written information about the CO test
☐ Advise her about the possibility of a faulty gas appliance
☐ Advise her about the possibility of a faulty car exhaust
☐ Give her the gas safety advice line number
☐ Have a further discussion with the woman about her smoking status
☐ Make a referral to the smoking cessation service
☐ Check the CO reading at the next appointment
☐ Something else (please state)
☐ None of the above
☐ Not applicable to my role

7. **Are you clear about the process for making a referral to local smoking cessation services?**

Please select one of the following options:

☐ Yes – I am clear
☐ No – I am not clear (please state reason)
☐ Unsure - (please state reason)

8. **If making an assessment at booking do you always make a referral to smoking cessation services when a pregnant woman confirms she is a smoker?**

Please select one of the following options:

☐ Yes – I always make a referral

☐ No – I don't always make a referral (please state reason)

☐ Depends (please state reason)

☐ Not applicable to my role

---

9. **If a woman declines a referral to smoking cessation services at booking do you always offer re-referral at the next appointment (assuming the woman continues to smoke)?**

Please select one of the following options:

☐ Yes – I always offer a referral

☐ No – I don't always offer a referral (please state reason)

☐ Depends (please state reason)

☐ Not applicable to my role

---

10. **If making an assessment at other points in the delivery of antenatal or postnatal care do you always offer a referral to smoking cessation services when a woman confirms she is a smoker?**

Please select one of the following options:

☐ Yes – I always offer a referral

☐ No – I don't always offer a referral (please state reason)

☐ It Depends (please state reason)

☐ Not applicable to my role

---

11. **Do you enquire about partner/other household members smoking when assessing pregnant women (whether the woman is a smoker or non-smoker)?**

Please select one of the following options:

☐ Yes – I always enquire

☐ No – I don't always enquire (please state reason)

☐ It Depends (please state reason)

☐ Not applicable to my role

---

12. **In your Trust is a Risk Perception Intervention offered to women who smoke but who do not engage with the smoking cessation service?**

Please select one of the following options:

☐ Yes

☐ No

☐ Unsure

☐ I don't know what Risk Perception is

☐ Not applicable to my role

If you answered 'No' or 'unsure' please go to question 14

13. **During antenatal assessment of a woman who smokes but who has not accepted the support of a smoking cessation service do you check whether a 'Risk Perception' intervention has been offered or delivered?**

Please select one of the following options:

☐ Yes – I always check whether Risk Perception has been offered/delivered

☐ No – I don't always check whether Risk Perception has been offered/delivered (please state reason)

☐ It depends (please state reason)

☐ Not applicable to my role

---

14. Using a scale of 1 to 5 please rate your level of agreement with the following statements:

14a. I am confident to have a conversation with a pregnant smoker about Nicotine Replacement Therapy

1	**2**	**3**	**4**	**5**
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

14b. I am confident to have a conversation with a pregnant smoker about E-Cigarettes

1	**2**	**3**	**4**	**5**
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

15. Do you enquire about smoking when providing post-natal care?

Please select one of the following options:

☐ Yes – I always enquire

☐ No – I don't always enquire (please state reason)

☐ It Depends (please state reason)

☐ Not applicable to my role

---

16. What are the biggest barriers you face in offering advice and support in relation to smoking in pregnancy?

Please tick all that apply

☐ Time constraints

☐ Concern about my future relationship with the patient

☐ I don't consider it an important enough issue to prioritise

☐ Availability of resources (eg appropriate patient literature)

☐ Lack of training

☐ Lack of knowledge about referral processes

☐ Don't think offering advice will lead to stopping smoking

☐ It is not important to my role

☐ Other (please state)

---

17. **In your opinion what service change or improvement would be most likely to improve the support that can be offered to pregnant smokers**

Please state:

18. **In your opinion is there anything else that would help women to quit?**

Please state:

19. If you have any other comments relating to smoking in pregnancy that you want to share, please include them here:

Appendix 17 Smoking in Pregnancy Survey for HV and FNP Services

Which service do you work for:
Please select all that apply:
☐ Coventry HV service
☐ Warwickshire HV service
☐ Coventry FNP service
☐ Warwickshire FNP service
☐ Other (Please state)

_____

Profession:
Please select one of the following:
☐ Health Visitor
☐ Family Nurse
☐ Community Nursery Nurse
☐ Staff Nurse
☐ Health Visitor Assistant
☐ Administrative staff
☐ Trainee Health Visitor
☐ Other (please state)

_____

Usual area of work:
Please select one of the following:
☐ Coventry
☐ Rugby
☐ South Warwickshire
☐ North Warwickshire
☐ Other (please state)

_____

1. **When you receive an antenatal notification from midwifery does it state whether a woman is a smoker or not?**

Please select one of the following options:
☐ Yes – it always includes smoking status
☐ No – it never includes smoking status
☐ Sometimes – it includes smoking status
☐ I never receive notifications

2. **In your current role how important is it that you offer pregnant women advice on smoking in pregnancy (assuming you are making an antenatal assessment)?**

Please rate on a scale of 1 to 5 – where 1 is unimportant and 5 is very important

1	2	3	4	5
Not important	Slightly Important	Moderately Important	Important	Very important

3. **In your current role how important is it that you offer postnatal advice to women who smoked but quit during their pregnancy?**

Please rate on a scale of 1 to 5 – where 1 is unimportant and 5 is very important

1	2	3	4	5

Not important Slightly Important Moderately Important Important Very important

4. Do you routinely offer 'relapse prevention' advice to women who have quit smoking in pregnancy?

Please select one of the following options:

☐ Yes – I always offer this advice

☐ No – I don't always offer advice (please state reason)

☐ Sometimes offer this advice (please state reason)

---

5. In your current role how important is it that you offer postnatal advice on smoking to women/ their partners who smoked during pregnancy and who continue to smoke?

Please rate on a scale of 1 to 5 – where 1 is unimportant and 5 is very important

1 **2** **3** **4** **5**

Not important Slightly Important Moderately Important Important Very important

6. In your current role how important is it that you offer antenatal and postnatal advice about secondary exposure to smoke (passive smoking)?

Please rate on a scale of 1 to 5 – where 1 is unimportant and 5 is very important

1 **2** **3** **4** **5**

Not important Slightly Important Moderately Important Important Very important

7. Do you always enquire about partner/other household members smoking when assessing women antenatally or postnatally (whether the woman is a smoker or non-smoker)?

Please select one of the following options:

☐ Yes – I always enquire

☐ No – I don't always enquire (please state reason)

☐ Sometimes – (please state reason)

☐ Not applicable to my role

---

8. Have you received training in the last 3 years to enable you to deliver Smoking advice?

Please select one of the following options:

☐ I have received training within the last year

☐ I have received training within the last two years

☐ I have received training within the last three years

☐ It is more than 3 years since I received training

☐ I have never received training

☐ Unsure

9. Using a scale of 1 to 5 please rate your level of agreement with the following statements:

9a. I have all the knowledge I need to deliver advice to pregnant/postnatal women who smoke and to their families

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

9b. I have all the confidence required to engage pregnant/postnatal smokers and their families in a motivational conversation to encourage quitting

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

9c. I am confident to deliver brief advice to a smoker about Nicotine Replacement Therapy

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

9d. I am confident to deliver brief advice to a smoker about E-Cigarettes

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

10. Do you think it would be helpful if you were able to undertake Carbon Monoxide (CO) monitoring?

Please select one of the following options:

☐ Yes – it would help
☐ No – it would not be helpful
☐ Unsure
☐ I do not know what CO monitoring is
☐ I do undertake CO monitoring

11. Are you clear about the process for making a referral to local smoking cessation services?

Please select one of the following options:

☐ Yes – I am clear
☐ No – I am not clear (please state reason)
☐ Unsure - (please state reason)
☐ Not applicable to my role

---

12. If making an antenatal or postnatal assessment do you always offer to make a referral to smoking cessation services when a woman confirms she is a smoker?

Please select one of the following options:

☐ Yes – I always offer a referral
☐ No – I don't always offer a referral (please state reason)
☐ Sometimes (please state reason)
☐ Not applicable to my role

---

13. If making an antenatal or postnatal assessment and there are family or household members who smoke do you signpost to smoking cessation services?

Please select one of the following options:

☐ Yes – I always signpost to smoking cessation services
☐ No – I don't always offer a sign-post (please state reason)
☐ Sometimes (please state reason)
☐ Not applicable to my role

---

14. What are the biggest barriers you face in offering brief advice and support in relation to smoking?

Please tick all that apply

☐ Time constraints
☐ Concern about my future relationship with the family
☐ I don't consider it an important enough issue to prioritise
☐ Availability of resources (eg appropriate patient literature)
☐ Lack of training
☐ Lack of knowledge about referral processes
☐ Don't think offering advice will lead to stopping smoking
☐ It is not important to my role
☐ Other (please state)

---

15. **In your opinion what service change or improvement would be most likely to improve the support that the Health Visiting service can offer to antenatal and/or postnatal smokers**

Please state:

16. **In your opinion is there anything else that would help women to quit smoking?**

Please state:

17. **In your opinion is there anything else that would help other family/household members to quit?**

Please state:

18. **If you have any other comments relating to smoking in pregnancy that you want to share please include them here:**

Please state:

Appendix 18 Smoking in Pregnancy Survey for GP Practice Staff

1. In your role how important is it that you offer pregnant women advice on smoking in pregnancy?

Please rate on a scale of 1 to 5 – where 1 is not important and 5 is very important

1	2	3	4	5
Not important	Slightly Important	Moderately Important	Important	Very important

2. Have you received training in the last 3 years to enable you to deliver Smoking in Pregnancy advice?

Please select one of the following options

☐ I have received training within the last year
☐ I have received training within the last two years
☐ I have received training within the last three years
☐ It is more than 3 years since I received training
☐ I have never received training
☐ Unsure

3. Using a scale of 1 to 5 please rate your level of agreement with the following statements:

3a. I have all the knowledge I need to deliver advice to pregnant women who smoke

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

3b. I have all the confidence required to engage pregnant smokers in a motivational conversation

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

3c I am confident to advise a pregnant smoker about Nicotine Replacement Therapy

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

3d. I am confident to advise a pregnant smoker about E-Cigarettes

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

4. If you do refer a pregnant smoker which service do you refer to?

Please tick all that apply

☐ I don't make referrals
☐ Midwife
☐ In-house service (provided by the GP practice I work in)
☐ Main SSS provider (ie generic smoking cessation service)
☐ Pharmacy
☐ SiP Specialist cessation in pregnancy service
☐ Other (please state)

5. What would make it easier for you to offer SS support for pregnant smokers?

Please state

6. **What opportunities are there (if any) to advise women to stop smoking before they get pregnant?**

Please state:

What CCG do you work for?

☐ WNCCG
☐ CRCCG
☐ SWCCG

Please provide the first section of the practice postcode?

What is your job?

☐ GP
☐ GP trainee
☐ Practice Nurse
☐ Other primary care clinician
☐ Practice manager/admin role
☐ Other (please state)

Appendix 19 Smoking in Pregnancy Survey for Family Centre Staff

Which service do you work for?
Please select all that apply:

Warwickshire C&F Centres	Coventry Family Hubs
Atherstone Stockingford Camp Hill Riversley Boughton Leigh Long Lawford Claremont Lillington Westgate Kingsway Lighthorn heath Stratford Alcester St Michael's	Aspire Family Hub Families for All Hub Harmony Hub The Moat Family Hub Mosaic Family Hub Park Edge Family Hub Pathways Family Hub Wood Side Family Hub

Warwickshire C&F Roles	Coventry Family Hubs Roles
Children's Services manager ☐ Early years lead ☐ Early years practitioner ☐ Administrative staff work ☐ Volunteer co-ordinator ☐ Community development worker ☐ Volunteer ☐Other (please state)	Early Help Assessment Coordinator Partnership coordinator Hub Team leader Volunteer Early Help Manager Family Hub Worker Family Hub Supervisor Family Hub Assistant Family Hub Youth Worker Social Worker Other

1. **Using a scale of 1 to 5 please rate your level of agreement with the following statement:**

I have all the confidence required to give brief advice on smoking to women who are smoking in pregnancy

1 Strongly disagree **2** Disagree **3** Neither agree or disagree **4** Agree **5** Strongly agree

2. **In your current role, how important is it that you offer pregnant women advice on smoking in pregnancy?**

Please rate on a scale of 1 to 5 – where 1 is unimportant and 5 is very important

1 Not important 2 Slightly Important 3 Moderately Important 4 Important 5 Very important

3. Using a scale of 1 to 5 please rate your level of agreement with the following statements:

3a. I use opportunities to give brief advice to women who are smoking and who might become pregnant (ie offering pre-conception advice)

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

3b. I use opportunities to give brief advice on smoking to partners/other family members of pregnant smokers

1	2	3	4	5
Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly agree

4. **Have you received training in the last 3 years to enable you to deliver Smoking in Pregnancy advice?**
   (Please select one of the following options)

☐ I have received training within the last year
☐ I have received training within the last two years
☐ I have received training within the last three years
☐ It is more than 3 years since I received training
☐ I have never received training
☐ Unsure

5. **Where do you signpost pregnant women for 'quit smoking' support?**
   (Please tick all that apply)

☐ I don't sign-post women
☐ To the GP
☐ To the midwife
☐ To a pharmacist
☐ To a specialist stop smoking in pregnancy service
☐ To a general/adult stop smoking service
☐ Other (please state)

---

6. **What are the biggest barriers you face in talking to women about smoking in pregnancy?**
   (Please tick all that apply)

☐ Time constraints
☐ The opportunity to talk to women about smoking
☐ Concern about my future relationship with the family
☐ I don't consider it an important enough issue to prioritise
☐ Availability of resources (eg appropriate patient literature)
☐ Lack of training
☐ Lack of knowledge about referral processes
☐ Don't think offering advice will lead to stopping smoking
☐ It is not important to my role
☐ Other (please state)

---

7. **Do you think there are opportunities within the centres or hubs where you work to do more to support pregnant smokers and/or their partners?**

☐ **Yes**
☐ **No**
☐ **Not sure**

If you answered ‘Yes’ please state what additional support might be possible:

_____

8. **In your opinion, is there anything else that would help pregnant women to quit smoking?**

Please state:

_____

9. **In your opinion, is there anything else that would help the partners of pregnant women to quit smoking?**

Please state:

_____

10. **Do you have any other comments relevant to Smoking in Pregnancy?**

Please state:

_____

11. **Do you have any other comments relevant to Smoking in general?**

Please state:

_____

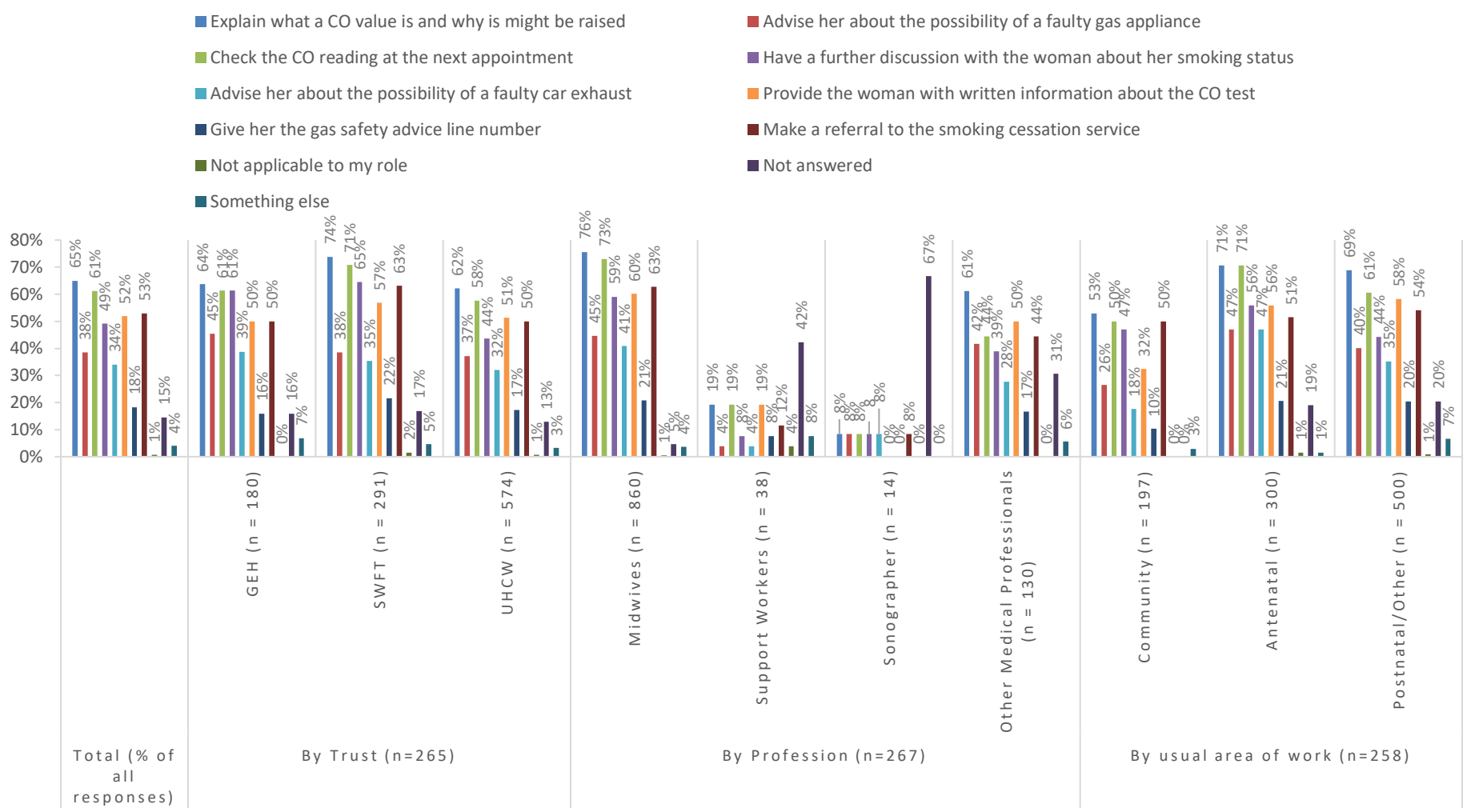
Appendix 20 Survey Responses: CO Monitoring

Table 20.1. Maternity Services: When a woman has a CO level of 4ppm or above but claims not to be a smoker what do you do? (Please answer all that apply)

Response	Total from 268 (%)	By Trust (n=265):			By profession (n=267):				By usual area of work (n=258)		
		GEH (n = 44) (%)	SWFT (n = 65)	UHCW (n = 156)	Midwives (n =193)	Support Worker (n = 26)	Sonographer (n = 12)	Other medical staff (n = 36)	Community (n=68)	Antenatal clinics (n=68)	Postnatal/ Other (n=122)
Explain what a CO value is and why is might be raised	174 (64.93%)	28 (63.64%)	48 (73.85%)	97 (62.18%)	146 (75.65%)	5 (19.23%)	1 (8.33%)	22 (61.11%)	36 (52.94%)	48 (70.59%)	84 (68.85%)
Provide the woman with written information about the CO test	103 (38.43%)	20 (45.45)	25 (38.46%)	58 (37.18%)	86 (44.56%)	1 (3.85%)	1 (8.33%)	15 (41.67%)	18 (26.47%)	32 (47.06%)	49 (40.16%)
Advise her about the possibility of a faulty gas appliance	164 (61.19%)	27 (61.36%)	46 (70.77%)	90 (57.69%)	141 (73.06)	5 (19.23%)	1 (8.33%)	16 (44.44%)	34 (50.0%)	48 (70.59%)	74 (60.66%)
Advise her about the possibility of a faulty car exhaust	132 (49.25%)	27 (61.36%)	42 (64.62%)	68 (43.59%)	114 (59.07%)	2 (7.69%)	1 (8.33%)	14 (38.89%)	32 (47.06%)	38 (55.88%)	54 (44.26%)
Give her the gas safety advice line number	91 (33.96%)	17 (38.64 %)	23 (35.38%)	50 (32.05%)	79 (40.93%)	1 (3.85%)	1 (8.33%)	10 (27.78%)	12 (17.65%)	32 (47.06%)	43 (35.25%)

Response	Total from 268 (%)	By Trust (n=265):			By profession (n=267):				By usual area of work (n=258)		
		GEH (n = 44) (%)	SWFT (n = 65)	UHCW (n = 156)	Midwives (n =193)	Support Worker (n = 26)	Sonographer (n = 12)	Other medical staff (n = 36)	Community (n=68)	Antenatal clinics (n=68)	Postnatal/ Other (n=122)
Have a further discussion with the woman about her smoking status	139 (51.87%)	22 (50.0%	37 (56.92%)	80 (51.28%)	116 (60.10%)	5 (19.23%)	0	18 (50.0%)	22 (32.35%)	38 (55.88%)	71 (58.20%)
Make a referral to the smoking cessation service	49 (18.28%)	7 (15.91%)	14 (21.54%)	27 (17.31%)	40 (20.73%)	2 (7.69%)	0	6 (16.67%)	7 (10.29%)	14 (20.59%)	25 (20.49%)
Check the CO reading at the next appointment	142 (52.99%)	22 (50.0%)	41 (63.08%)	78 (50.0%)	121 (62.69%)	3 (11.54%)	1 (8.33)	16 (44.44%)	34 (50.0%)	35 (51.47%)	66 (54.10%)
None of the above	2 (0.75%)	0	1 (1.54%)	1 (0.64%)	1 (0.52%)	1 (3.85%)	0	0	0	1 (1.47%)	1 (0.82%)
Not applicable to my role	39 (14.55%)	7 (15.91%)	11 (16.92%)	20 (12.82%)	9 (4.66%)	11 (42.31%)	8 (66.67%)	11 (30.56%)	0	13 (19.12)	25 (20.49%)
Something else	11 (4.10%)	3 (6.82%)	3 (4.62%)	5 (3.21%)	7 (3.63%)	2 (7.69%)	0	2 (5.56%)	2 (2.94%)	1 (1.47%)	8 (6.56%)

Figure 20.1. Maternity Services: When a woman has a CO level of 4ppm or above but claims not to be a smoker what do you do? (Please answer all that apply)

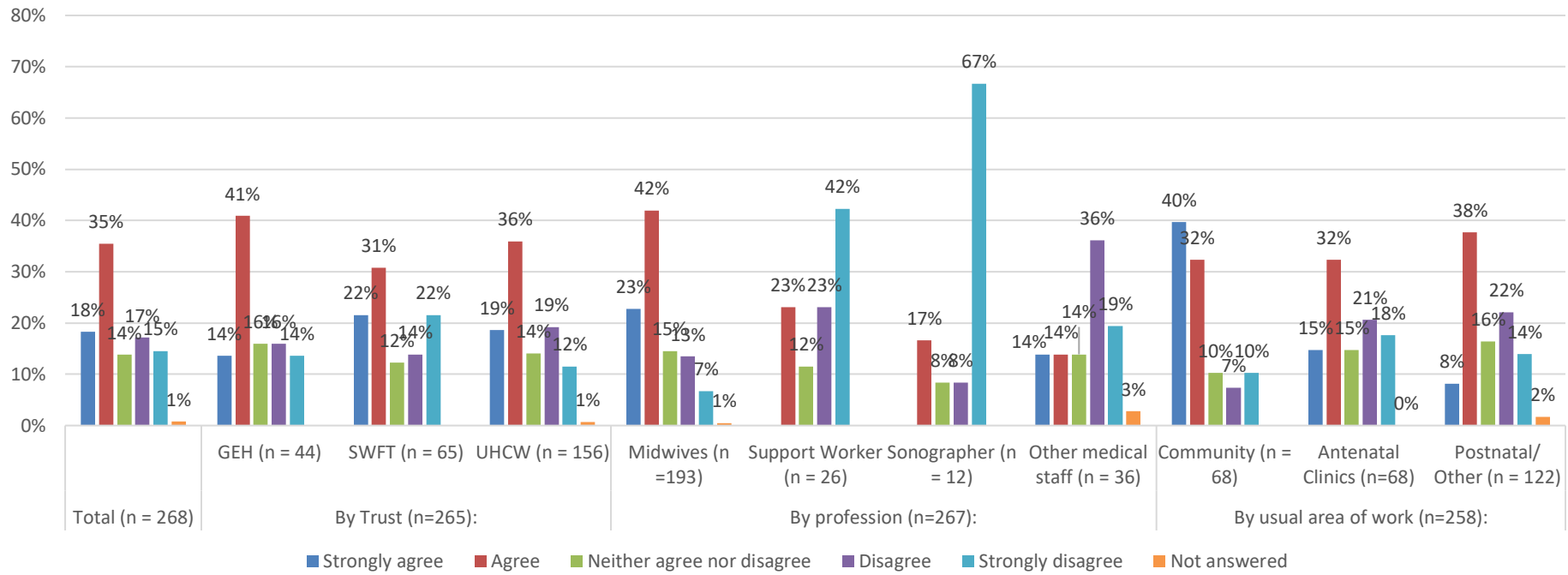


Responses to 'Something else'
Not had training, n=2; Don't see antenatal women, n=1; Tell midwife, n=2 (both MSW); Lactose intolerance, n=1; Check gas/heating system, n=2; Passive smoking, n=2; Home CO test, n=1

Table 20.2. Maternity Services: Please indicate the degree to which you agree/disagree with the following statement: I am confident to advise a pregnant woman about her CO result - Carbon Monoxide

Agreement	Total from 268 (%)	By Trust (n=265):			By profession (n=267):				By usual area of work (n=258)		
		GEH (n = 44) (%)	SWFT (n = 65)	UHCW (n = 156)	Midwives (n =193)	Support Worker (n = 26)	Sonographer (n = 12)	Other medical staff (n = 36)	Community (n=68)	Antenatal clinics (n=68)	Postnatal/ Other (n=122)
Strongly agree	49 (18.28%)	6 (13.64%)	14 (21.54%)	29 (18.59%)	44 (22.8)%)	0	0	5 (13.89%)	27 (39.71%)	10 (14.71%)	10 (8.20%)
Agree	95 (35.45%)	18 (40.90%)	20 (30.77%)	56 (35.90%)	81 (41.97%)	6 (23.08%)	2 (16.67%)	5 (13.89%)	22 (32.35%)	22 (32.35%)	46 (37.70%)
Neither agree nor disagree	37 (13.81%)	7 (15.91%)	8 (12.30%)	22 (14.10%)	28 (14.51%)	3 (11.53%)	1 (8.33%)	5 (13.89%)	7 (10.29%)	10 (14.71%)	20 (16.39%)
Disagree	46 (17.16%)	7 (15.91%)	9 (13.85%)	30 (19.23%)	26 (13.47%)	6 (23.08%)	1 (8.33%)	13 (36.11%)	5 (7.35%)	14 (20.59%)	27 (22.13%)
Strongly disagree	39 (14.55%)	6 (13.64%)	14 (21.54%)	18 (11.54%)	13 (6.74%)	11 (42.31%)	8 (66.67%)	7 (19.44%)	7 (10.29%)	12 (17.64%)	17 (13.93%)
Not answered	2 (0.75%)	0	0	1 (0.64%)	1 (0.52%)	0	0	1 (2.78%)	0	0	2 (1.64%)

Figure 20.2. Maternity Services: I am confident to advise a pregnant woman about her CO result - Carbon Monoxide

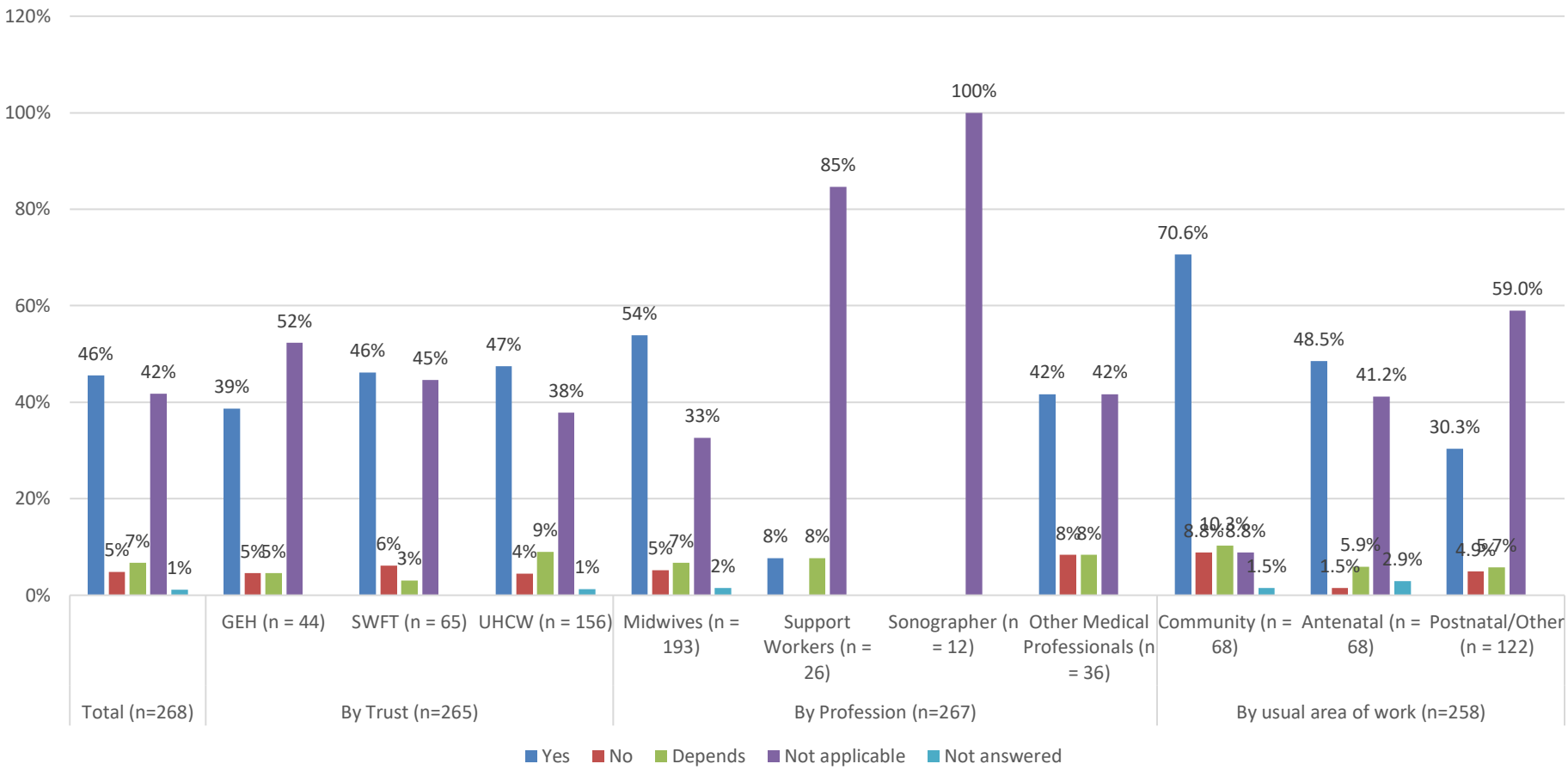


Appendix 21 Survey Responses: Referring to Local Services

Table 21.1. Maternity Services: If a woman declines a referral to smoking cessation services at booking do you always offer re-referral at the next appointment (assuming the woman continues to smoke)?

Response	Total from 268 (%)	By Trust (n=265):			By profession (n=267):				By usual area of work (n=258)		
		GEH (n = 44) (%)	SWFT (n = 65)	UHCW (n = 156)	Midwives (n =193)	Support Worker (n = 26)	Sonographer (n = 12)	Other medical staff (n = 36)	Community (n=68)	Antenatal clinics (n=68)	Postnatal/ Other (n=122)
Yes	122 (45.52%)	17 (38.63%)	30 (46.15%)	74 (47.44%)	104 (53.89%)	2 (7.69%)	0	15 (41.67%)	48 (70.59%)	33 (48.53%)	37 (30.32%)
No	13 (4.85%)	2 (4.55%)	4 (6.15%)	7 (4.49%)	10 (5.18%)	0	0	3 (8.33%)	6 (8.82%)	1 (1.47%)	6 (4.92%)
Depends	18 (6.72%)	2 (4.55%)	2 (3.08%)	14 (8.97%)	13 (6.74%)	2 (7.69%)	0	3 (8.33%)	7 (10.29%)	4 (5.88%)	7 (5.74%)
Not applicable	112 (41.79%)	23 (52.27%)	29 (44.62%)	59 (37.82%)	63 (32.64%)	22 (84.62%)	12 (100%)	15 (41.67%)	6 (8.82%)	28 (41.18%)	72 (59.02%)
Not answered	3 (1.12%)	0	0	2 (1.28%)	3 (1.55%)	0	0	0	1 (1.47%)	2 (2.94%)	0

Figure 21.1. Maternity Services: If a woman declines a referral to smoking cessation services at booking do you always offer re-referral at the next appointment (assuming the woman continues to smoke)?



Reasons given for not always re-referring:
Woman has already declined/already discussed smoking and limited time/only refer if woman accepts, n = 5; Usually too late in pregnancy, n = 1 (postnatal ward midwife); Women have the right to an informed choice, n = 2; If woman declines again, n = 1; If think woman will disengage if ask again, n = 1; Some women aggressively against referral, n =1

Table 21.2. Maternity Services: If making an assessment at other points in the delivery of antenatal or postnatal care, do you always offer a referral to smoking cessation services when a woman confirms she is a smoker?

Response	Total from 268 (%)	By Trust (n=265):			By profession (n=267):				By usual area of work (n=258)		
		GEH (n = 44) (%)	SWFT (n = 65)	UHCW (n = 156)	Midwives (n =193)	Support Worker (n = 26)	Sonographer (n = 12)	Other medical staff (n = 36)	Community (n=68)	Antenatal clinics (n=68)	Postnatal/ Other (n=122)
Yes	144 (53.73%)	21 (47.73%)	32 (49.23%)	90 (57.69%)	122 (63.21%)	4 (15.38%)	0	17 (47.22%)	60 (88.24%)	33(48.53%)	47 (38.53%)
No	34 (12.69%)	4 (9.09%)	7 (10.77%)	23 (14.74%)	27 (13.99%)	3 (11.54%)	1 (8.33%)	3 (8.33%)	4 (5.88%)	9 (13.24%)	20 (16.39%)
Depends	26 (9.70%)	7 (15.91%)	9 (13.85%)	10 (6.41%)	18 (9.33%)	0	1 (8.33%)	7 (19.45%)	1 (1.47%)	5 (7.35%)	20 (16.39%)
Not applicable	60 (22.39%)	11 (25.0%)	17 (26.15%)	31 (19.87%)	23 (11.92%)	19 (73.08%)	10 (8.34%)	8 (22.22%)	2 (2.94%)	19 (27.94%)	35 (28.69%)
Not answered	4 (1.49%)	1 (2.27%)	0	2 (1.28%)	3 (1.55%)	0	0	1 (2.78%)	1 (1.47%)	2 (2.94%)	0

Figure 21.2. Maternity Services: If making an assessment at other points in the delivery of antenatal or postnatal care, do you always offer a referral to smoking cessation services when a woman confirms she is a smoker?

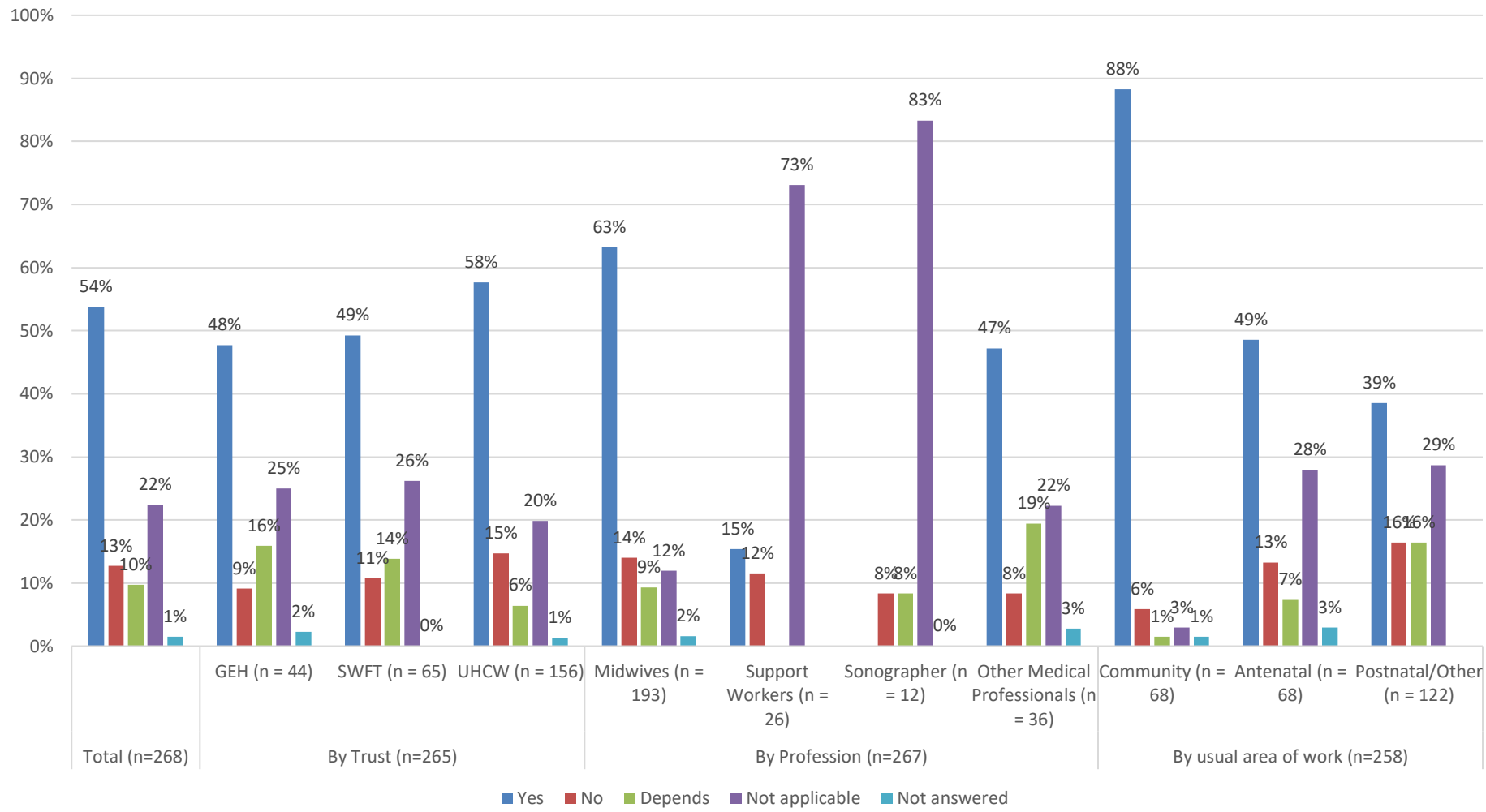
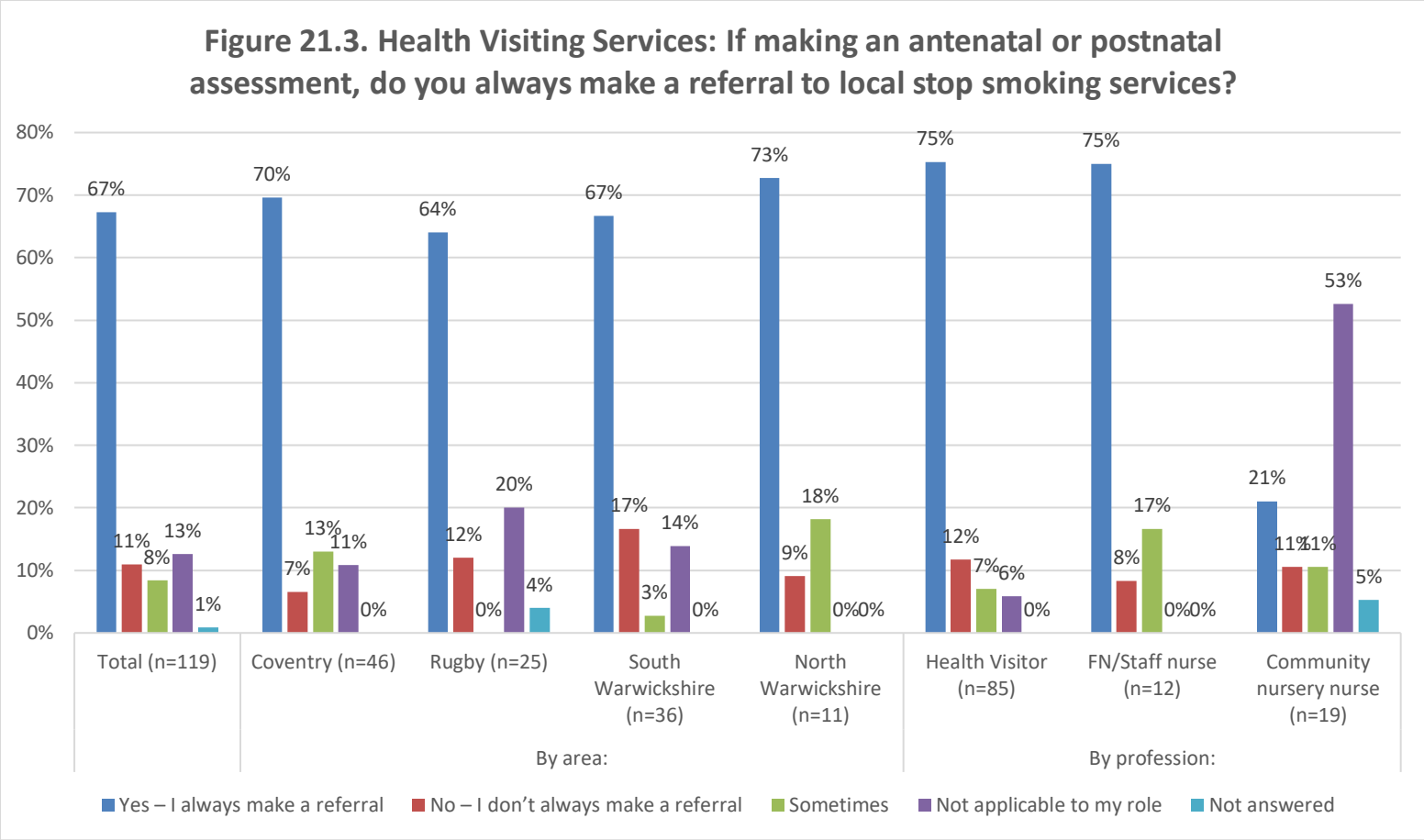


Table 21.3. Health Visiting Services: If making an antenatal or postnatal assessment, do you always make a referral to local stop smoking services?

Response		**By area:**				**By profession:**		
	Total (n=119)	**Coventry (n=46)**	**Rugby (n=25)**	**South Warwickshire (n=36)**	**North Warwickshire (n=11)**	**Health Visitor (n=85)**	**FN/Staff nurse (n=12)**	**Community nursery nurse (n=19)**
Yes – I always make a referral	80 (67.23%)	32 (69.57%)	16 (64.0%)	24 (66.67%)	8 (72.73%)	64 (75.29%)	9 (75.0%)	4 (21.05%)
No – I don't always make a referral	13 (10.92%)	3 (6.52%)	3 (12.0%)	6 (16.67%)	1 (9.09%)	10 (11.76%)	1 (8.33%)	2 (10.53%)
Sometimes	10 (8.40%)	6 (13.04%)	0	1 (2.78%)	2 (18.18%)	6 (7.06%)	2 (16.67%)	2 (10.53%)
Not applicable to my role	15 (12.61%)	5 (10.87%)	5 (20.0%)	5 (13.88%)	0	5 (5.88%)	0	10 (52.63%)
Not answered	1 (0.84%)	0	1 (4.0%)	0	0	0	0	1 (5.26%)



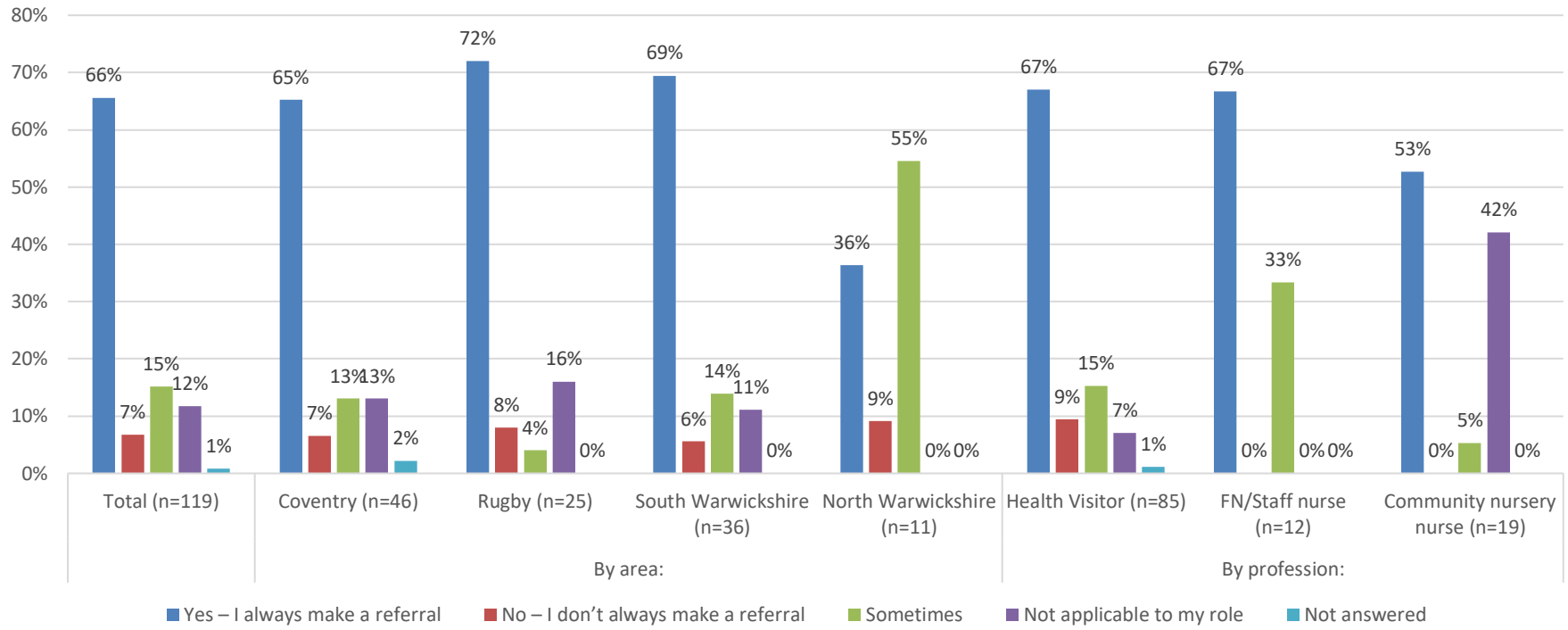
Please tell us why you do not always make a referral to local smoking cessation services

If woman refuses/doesn't want to stop smoking: n=8; Lack of referral knowledge: n=1; Refer them locally (GP/pharmacy?): n=1

Table 21.4. Health Visiting Services: If making an antenatal or postnatal assessment and there are family or household members who smoke do you signpost to the stop smoking service?

Response		**By area:**				**By profession:**		
	Total (n=119)	**Coventry (n=46)**	**Rugby (n=25)**	**South Warwickshire (n=36)**	**North Warwickshire (n=11)**	**Health Visitor (n=85)**	**FN/Staff nurse (n=12)**	**Community nursery nurse (n=19)**
Yes – I always make a referral	78 (65.55%)	30 (65.22%)	18 (72.0%)	25 (69.44%)	4 (36.36%)	57 (67.06%)	8 (66.67%)	10 (52.63%)
No – I don't always make a referral	8 (6.72%)	3 (6.52%)	2 (8.0%)	2 (5.56%)	1 (9.09%)	8 (9.41%)	0	0
Sometimes	18 (15.13%)	6 (13.04%)	1 (4.0%)	5 (13.89%)	6 (54.55%)	13 (15.29%)	4 (33.33%)	1 (5.26%)
Not applicable to my role	14 (11.76%)	6 (13.04%)	4 (16.0%)	4 (11.11%)	0	6 (7.06%)	0	8 (42.11%)
Not answered	1 (0.84%)	1 (2.17%)	0	0	0	1 (1.18%)	0	0

Figure 21.4. Health Visiting Services: If making an antenatal or postnatal assessment and there are family or household members who smoke do you signpost to the stop smoking service?



Please tell us why you do not always make signpost family or household members who smoke

Only if they want to: n=9; If not open to the suggestion/willing to quit: n=7; Give advice on support: n=2; Consent not always given: n=2

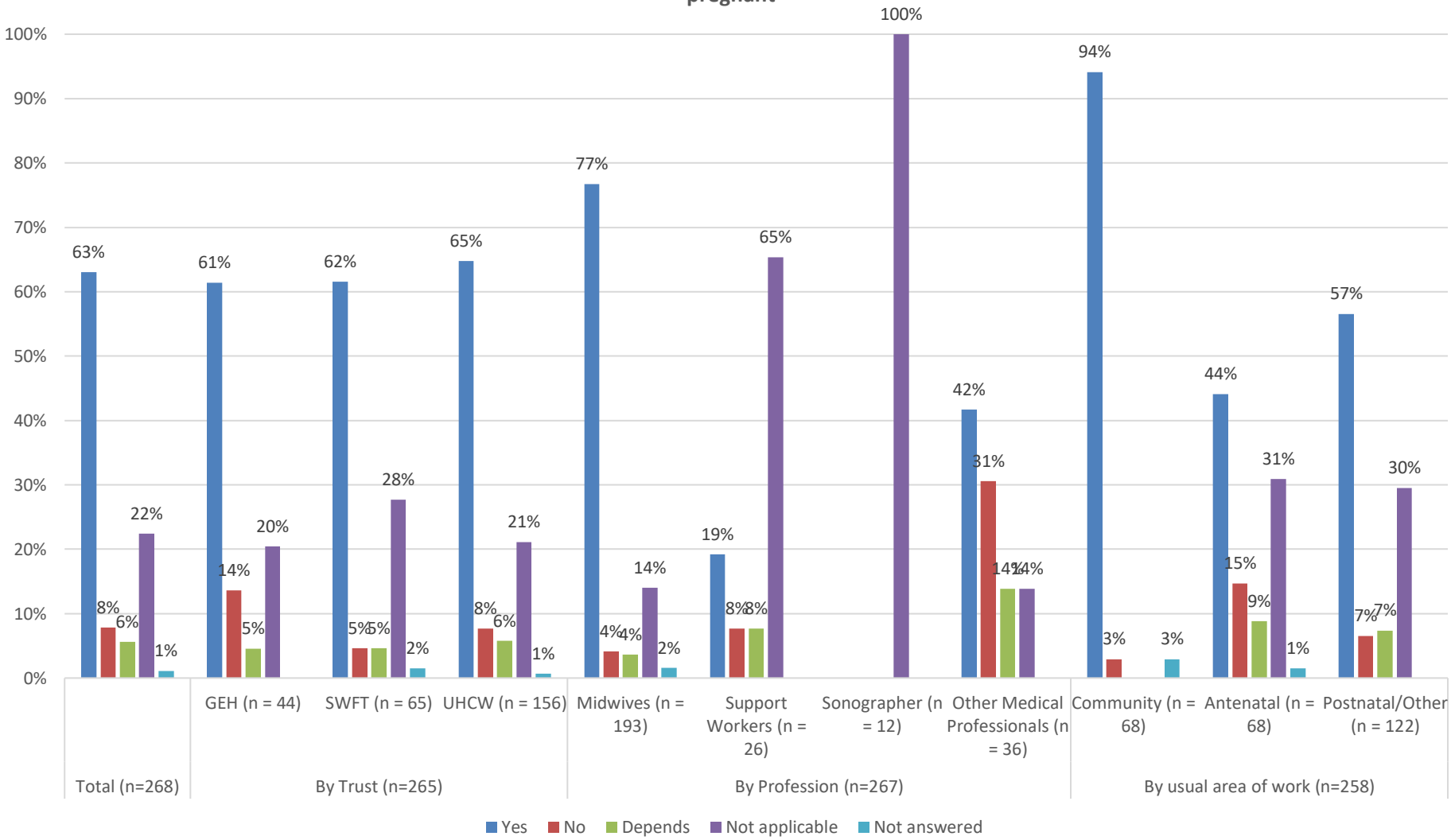
Other important issues to prioritise: n=1; If they know where information is accessible: n=1

Appendix 22 Survey Responses: Partner/Other Household Smokers

Table 22.1. Maternity Services: Do you enquire about partner/other household members smoking when assessing pregnant women (whether the woman is a smoker or non-smoker)?

Response	Total from 268 (%)	By Trust (n=265):			By profession (n=267):				By usual area of work (n=258)		
		GEH (n = 44) (%)	SWFT (n = 65)	UHCW (n = 156)	Midwives (n =193)	Support Worker (n = 26)	Sonographer (n = 12)	Other medical staff (n = 36)	Community (n=68)	Antenatal clinics (n=68)	Postnatal/ Other (n=122)
Yes	169 (63.06%)	27 (61.36%)	40 (61.54%)	101 (64.74%)	148 (76.68%)	5 (19.23%)	0	15 (41.67%)	64 (94.12%)	30 (44.12%)	69 (56.56%)
No	21 (7.84%)	6 (13.64%)	3 (4.62%)	12 (7.69%)	8 (4.15%)	2 (7.69%)	0	11 (30.56%)	2 (2.94%)	10 (14.71%)	8 (6.55%)
Depends	15 (5.60%)	2 (4.55%)	3 (4.62%)	9 (5.77%)	7 (3.63%)	2 (7.69%)	0	5 (13.89%)	0	6 (8.82%)	9 (7.38%)
Not applicable	60 (22.39%)	9 (20.45%)	18 (27.69%)	33 (21.15%)	27 (13.99%)	17 (65.39%)	12 (100%)	5 (13.89%)	0	21 (30.88%)	36 (29.51%)
Not answered	3 (1.12%)	0	1 (1.53%)	1 (0.64%)	3 (1.55%)	0	0	0	2 (2.94%)	1 (1.47%	0

Figure 22.1. Maternity Services: Do you enquire about partner/other household members smoking when assessing pregnant

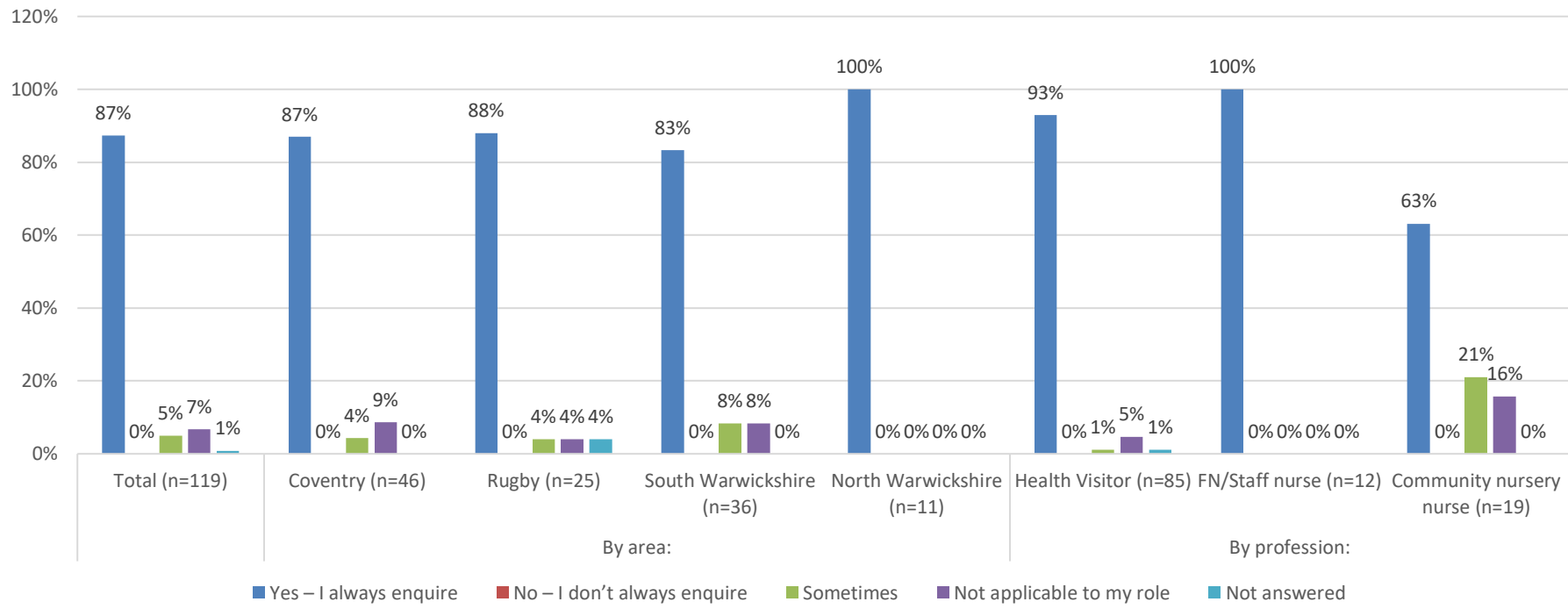


Response to why don't you always ask about other household smokers:
Competing work pressures/lack of time: n=3 (1 community midwife, 1 antenatal midwife, 1 obstetrician); Don't have the information, n=1 (obstetrician); If woman is a smoker, n=1 (obstetrician); Not a priority/poorly baby: n=4 (1 labour ward midwife, 1 foetal medicine midwife, 1 neonatal nurse, 1 obstetrician).

Table 22.2. Health Visiting Services: Do you always enquire about partner/other household members who smoke when assessing women during antenatal or postnatal care (whether the woman smokes or not)?

Response		**By area:**				**By profession:**		
	Total (n=119)	**Coventry (n=46)**	**Rugby (n=25)**	**South Warwickshire (n=36)**	**North Warwickshire (n=11)**	**Health Visitor (n=85)**	**FN/Staff nurse (n=12)**	**Community nursery nurse (n=19)**
Yes – I always enquire	104 (87.39%)	40 (86.96%)	22 (88.0%)	30 (83.33%)	11 (100%)	79 (92.94%)	12 (100%)	12 (63.16%)
No – I don't always enquire	0	0	0	0	0	0	0	0
Sometimes	8 (5.04%)	2 (4.35%)	1 (4.0%)	3 (8.33%)	0	1 (1.18%)	0	4 (21.05%)
Not applicable to my role	8 (6.72%)	4 (8.70%)	1 (4.0%)	3 (8.33%)	0	4 (4.71%)	0	3 (15.79%)
Not answered	1 (0.84%)	0	1 (4.0%)	0	0	1 (1.18%)	0	0

Figure 22.2. Health Visiting Services: Do you always enquire about partner/other household members who smoke when assessing women during antenatal or postnatal care (whether the woman smokes or not)?



Reasons for not always enquire about partner/household members who smoke (n=3):
Ask at 10 month review (n=2) but often forget at 2 year review as so much to get through; Only offer to those I come into contact with; There's a question on the reviews.

Table 22.3. Children and Family Centres: I use opportunities to give brief advice on smoking to partners/other family members of pregnant women who smoke

Importance	**Total (n=57)**	**By area (n=57):**		**By role (n=55):**	
		Coventry (n=30)	**Warwickshire (n=27)**	**Family hub/Early years worker (n=36)**	**Manager/Co-ordinator (n=19)**
Strongly agree	4 (7.02%)	3 (10.0%)	1 (3.70%)	3 (8.33%)	1 (5.26%)
Agree	18 (31.58%)	11 (36.67%)	7 (25.93%)	10 (27.78%)	7 (36.84%)
Neither agree nor disagree	15 (26.32%)	5 (16.67%)	10 (37.04%)	10 (27.78%)	4 (21.05%)
Disagree	15 (26.32%)	9 (30.0%)	6 (22.22%)	10 (27.78%)	5 (26.32%)
Strongly disagree	5 (8.77%)	2 (6.67%)	3 (11.11%)	3 (8.33%)	2 (10.53%)

Figure 22.3. Children and Family Services: I use opportunities to give brief advice on smoking to partners/other family members of pregnant women who smoke

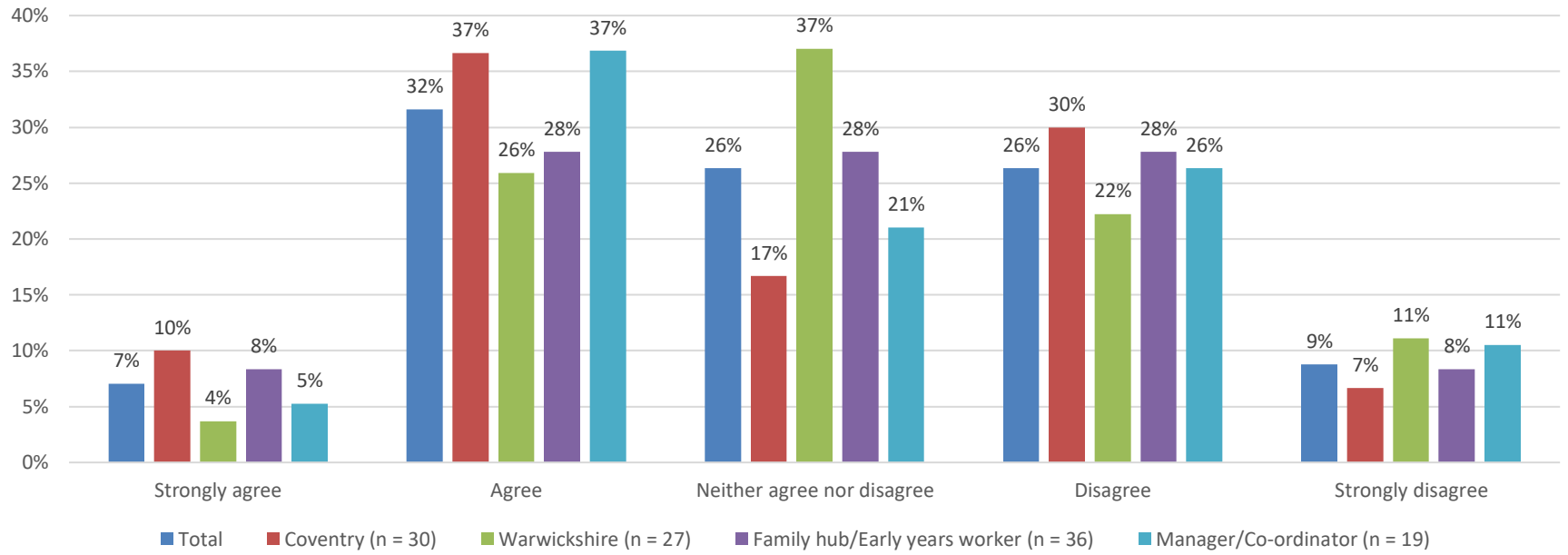
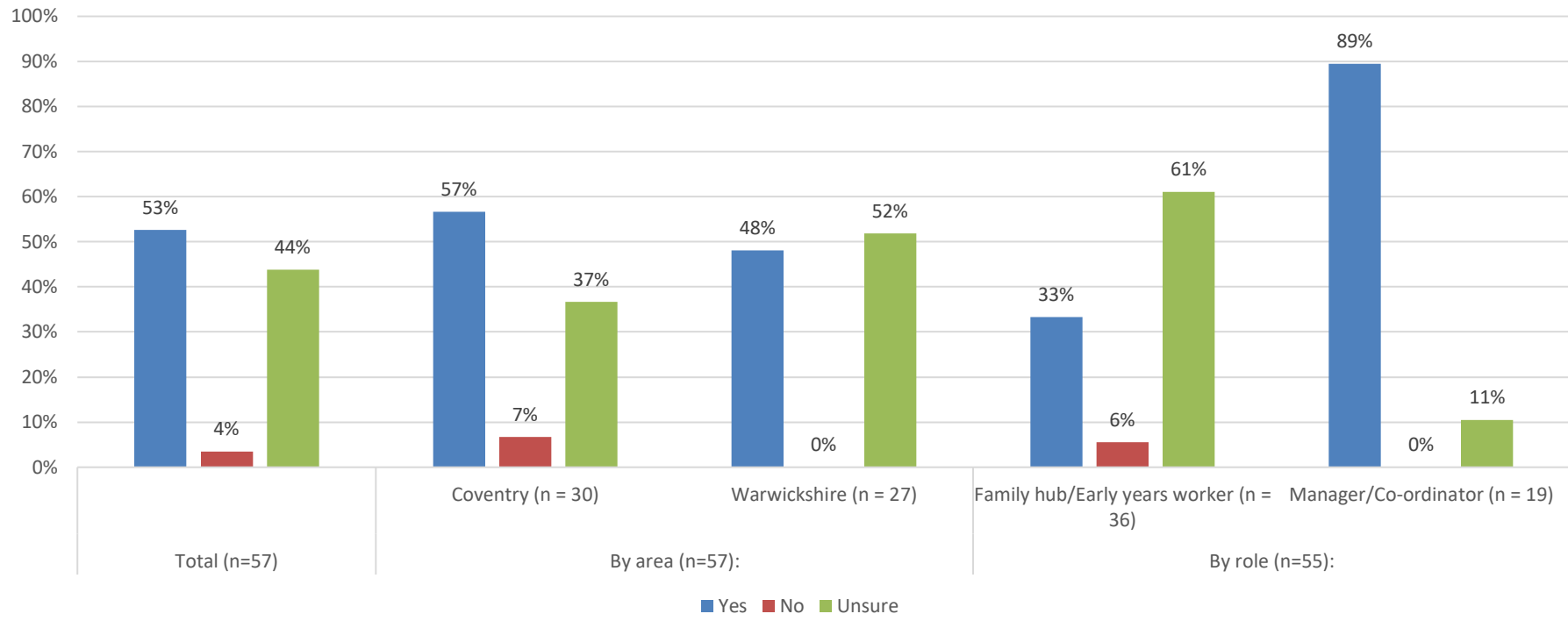


Table 22.4. Children and Family Centres: Do you think there are opportunities within the centre or hubs where you work to do more to support women who are pregnant and smoke and/or their partners?

Response	Total (n=57)	By area (n=57):		By role (n=55):	
		Coventry (n = 30)	Warwickshire (n = 27)	Family hub/Early years worker (n = 36)	Manager/Co-ordinator (n = 19)
Yes	30 (52.63%)	17 (56.67%)	13 (48.15%)	12 (33.33%)	17 (89.47%)
No	2 (3.51%)	2 (6.67%)	0	2 (5.56%)	0
Unsure	25 (43.86%)	11 (36.67%)	14 (51.85%)	22 (61.11%)	2 (10.53%)

Open text response for 'yes' (n=26):
Utilise existing clinics, e.g. baby weigh-in clinic, antenatal and postnatal clinics, utilise existing hub staff: n=7; Run groups for antenatal mums/expectant parents/partners: n=7; More training required (how to approach subject/facts and figures/referral process): n=6; Midwives/Health Visitors/Early years practitioners to do more: n=4; More resources in centres, e.g. leaflets, promotional boards, digital screens: n=4; Provide space for other services, e.g. SSiPS, to come in, drop-in sessions: n=4

Figure 22.4. Children and Family Centres: Do you think there are opportunities within the centre or hubs where you work to do more to support women who are pregnant and smoke and/or their partners?



Appendix 23 Survey Responses: Postnatal Advice

Table 23.1. Maternity Services: Do you enquire about smoking when providing post-natal care?

Response	Total from 268 (%)	By Trust (n=265):			By profession (n=267):				By usual area of work (n=258)		
		GEH (n = 44) (%)	SWFT (n = 65)	UHCW (n = 156)	Midwives (n =193)	Support Worker (n = 26)	Sonographer (n = 12)	Other medical staff (n = 36)	Community (n=68)	Antenatal clinics (n=68)	Postnatal/ Other (n=122)
Yes	118 (44.03%)	23 (52.27%)	22 (33.85%)	71 (45.51%)	106 (54.92%)	3 (11.54%)	0	9 (25.0%)	47 (69.12%)	15 (22.06%)	53 (43.44%)
No	48 (17.91%)	4 (9.09%)	15 (23.07%)	29 (18.59%)	33 (17.10%)	3 (11.54%)	0	10 (27.78%)	11 (16.18%)	11 (16.18%)	25 (20.49%)
Depends	26 (9.70%)	3 (6.82%)	7 (10.80%)	16 (10.26%)	18 (9.33%)	3 (11.54%)	1 (8.33%)	5 (13.89%)	9 (13.23%)	6 (8.82%)	10 (8.20%)
Not applicable	73 (27.24%)	14 (31.82%)	19 (29.23%)	39 (25.0%)	35 (18.13%)	17 (65.38%)	11 (91.67%)	10 (27.78%)	1 (1.47%)	33(48.53%)	34 (27.87%)

Responses to 'Please tell us here the reasons why you don't always enquire about smoking when providing post-natal care (optional'):

- Resume this is done antenatally, n = 1; Time constraints, n = 10; When discussing smokefree homes/SIDS/safe sleeping, n = 8; Part of discharge process, n = 3; Don't ask if non-smoker/ask if known smoker, n = 12; If the baby is poorly, n = 2 (inappropriate, n = 1, more appropriate, n = 1); Forget, n = 1

Figure 23.1. Maternity Services: Do you enquire about smoking when providing post-natal care?

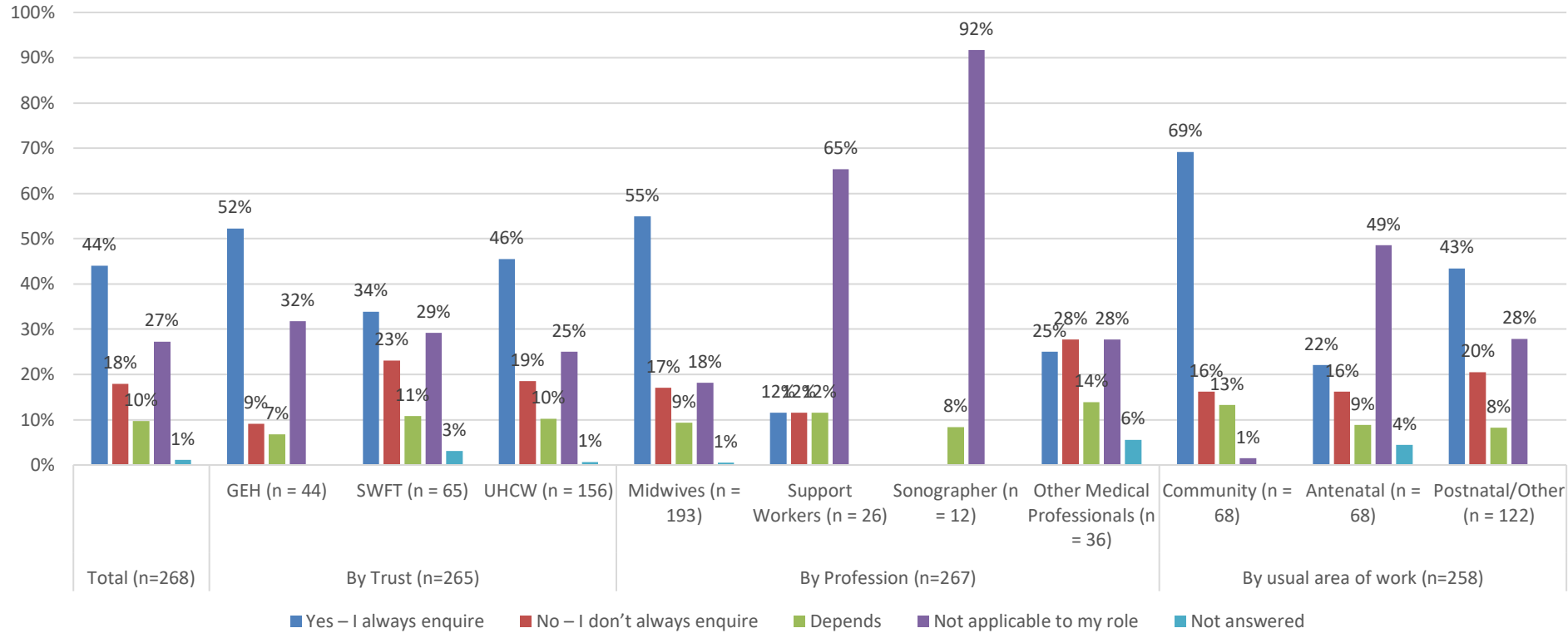


Table 23.2. Health Visiting Services: In your current role how important is it that you offer postnatal advice to women who smoked but quit during their pregnancy?

Response		**By area:**				**By profession:**		
	Total (n=119)	**Coventry (n=46)**	**Rugby (n=25)**	**South Warwickshire (n=36)**	**North Warwickshire (n=11)**	**Health Visitor (n=85)**	**FN/Staff nurse (n=12)**	**Community nursery nurse (n=19)**
Very important	71 (59.66%)	34 (52.17%)	14 (56.0%)	26 (72.22%)	6 (54.55%)	50 (58.82%)	9 (75.0%)	9 (47.37%)
Important	29 (24.37%)	11 (23.91%)	9 (36.0%)	5 (13.89%)	4 (36.36%)	23 (27.06%)	1 (8.33%)	5 (26.32%)
Moderately important	5 (4.2%)	4 (8.7%)		0	1 (9.09%)	2 (2.35%)	2 (16.67%)	0
Slightly important	4 (3.36%)	4 (8.7%)		0	0	3 (3.53%)	0	2 (10.53%)
Not important	4 (3.36%)	2 (4.35%)	1 (4.0%)	1 (2.78%)	0	3 (3.53%)	0	1 (5.26%)
Not answered	6 (5.04%)	1 (2.17%)	1 (4.0%)	4 (11.11%)	0	4 (4.71%)	0	2 (10.53%)

Figure 23.2. Health Visiting Services: In your current role how important is it that you offer postnatal advice to women who smoked but quit during their pregnancy?

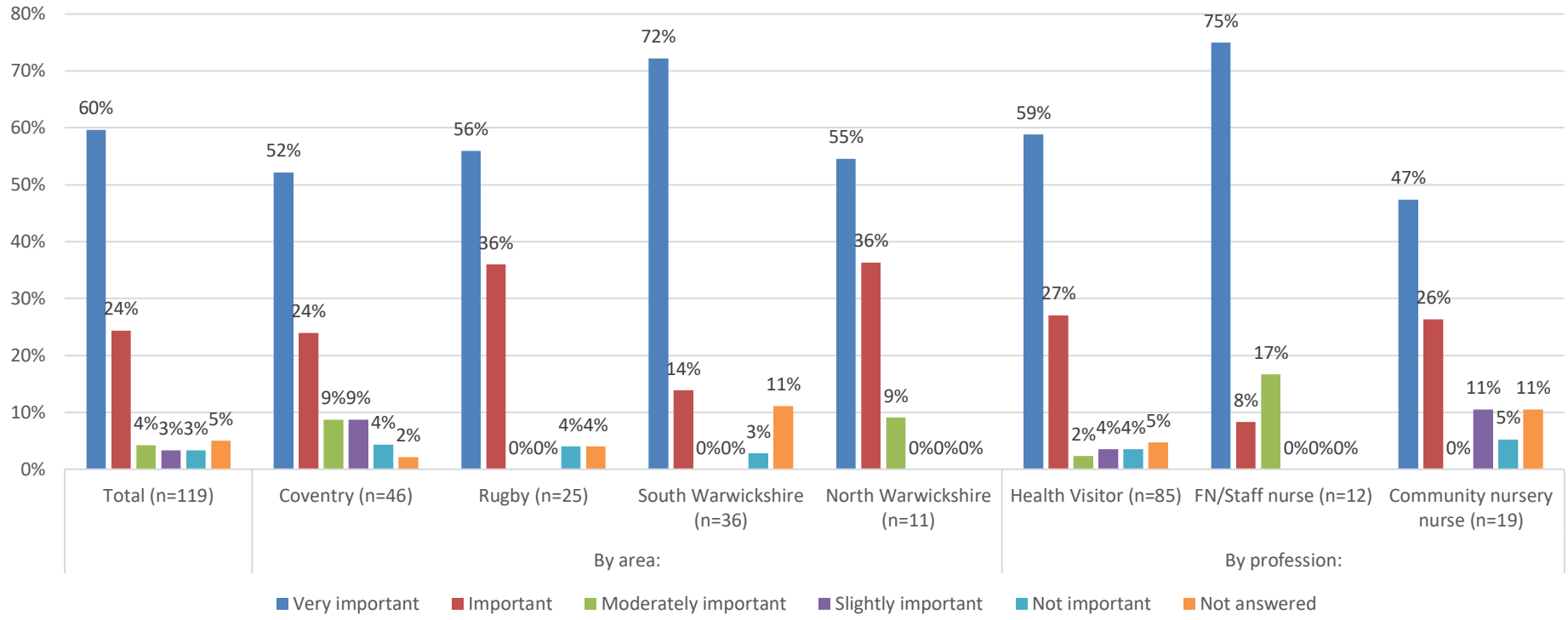
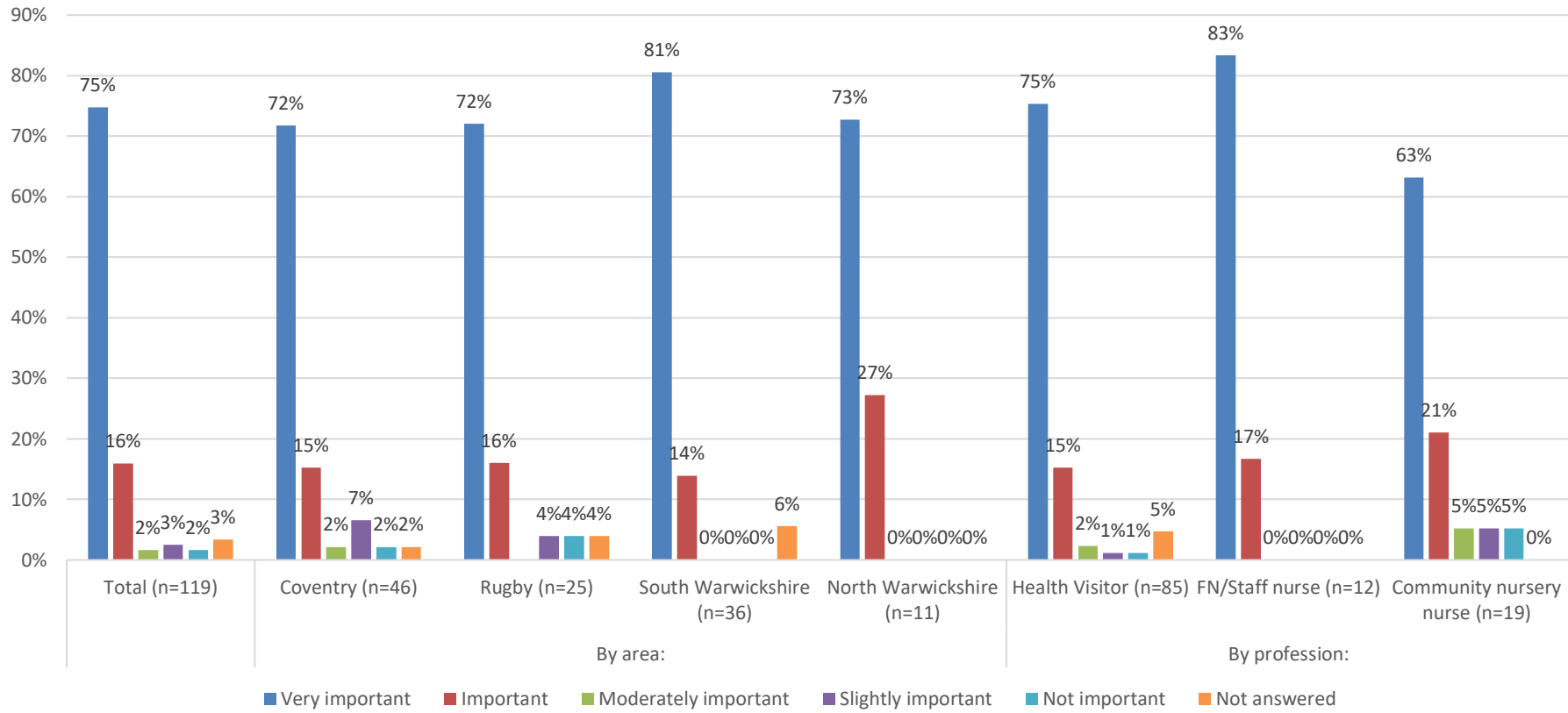


Table 23.3. Health Visiting Services: In your current role, how important is it that you offer postnatal advice to women/their partners who smoked during pregnancy and continue to smoke?

Response		**By area:**				**By profession:**		
	Total (n=119)	**Coventry (n=46)**	**Rugby (n=25)**	**South Warwickshire (n=36)**	**North Warwickshire (n=11)**	**Health Visitor (n=85)**	**FN/Staff nurse (n=12)**	**Community nursery nurse (n=19)**
Very important	89 (74.79%)	33 (71.74%)	18 (72.0%)	29 (80.56%)	8 (72.73%)	64 (75.29%)	10 (83.33%)	12 (63.16%)
Important	19 (15.97%)	7 (15.22%)	4 (16.0%)	5 (13.89%)	3 (27.27%)	13 (15.29%)	2 (16.67%)	4 (21.05%)
Moderately important	2 (1.68%)	1 (2.17%)	0	0	0	2 (2.35%)	0	1 (5.26%)
Slightly important	3 (2.52%)	3 (6.52%)	1 (4.0%)	0	0	1 (1.18%)	0	1 (5.26%)
Not important	2 (1.68%)	1 (2.17%)	1 (4.0%)	0	0	1 (1.18%)	0	1 (5.26%)
Not answered	4 (3.36%)	1 (2.17%)	1 (4.0%)	2 (5.56%)	0	4 (4.71%)	0	0

Figure 23.3. Health Visiting Services: In your current role, how important is it that you offer postnatal advice to women/their partners who smoked during pregnancy and continue to smoke?



Appendix 24 Survey Responses: Other Questions

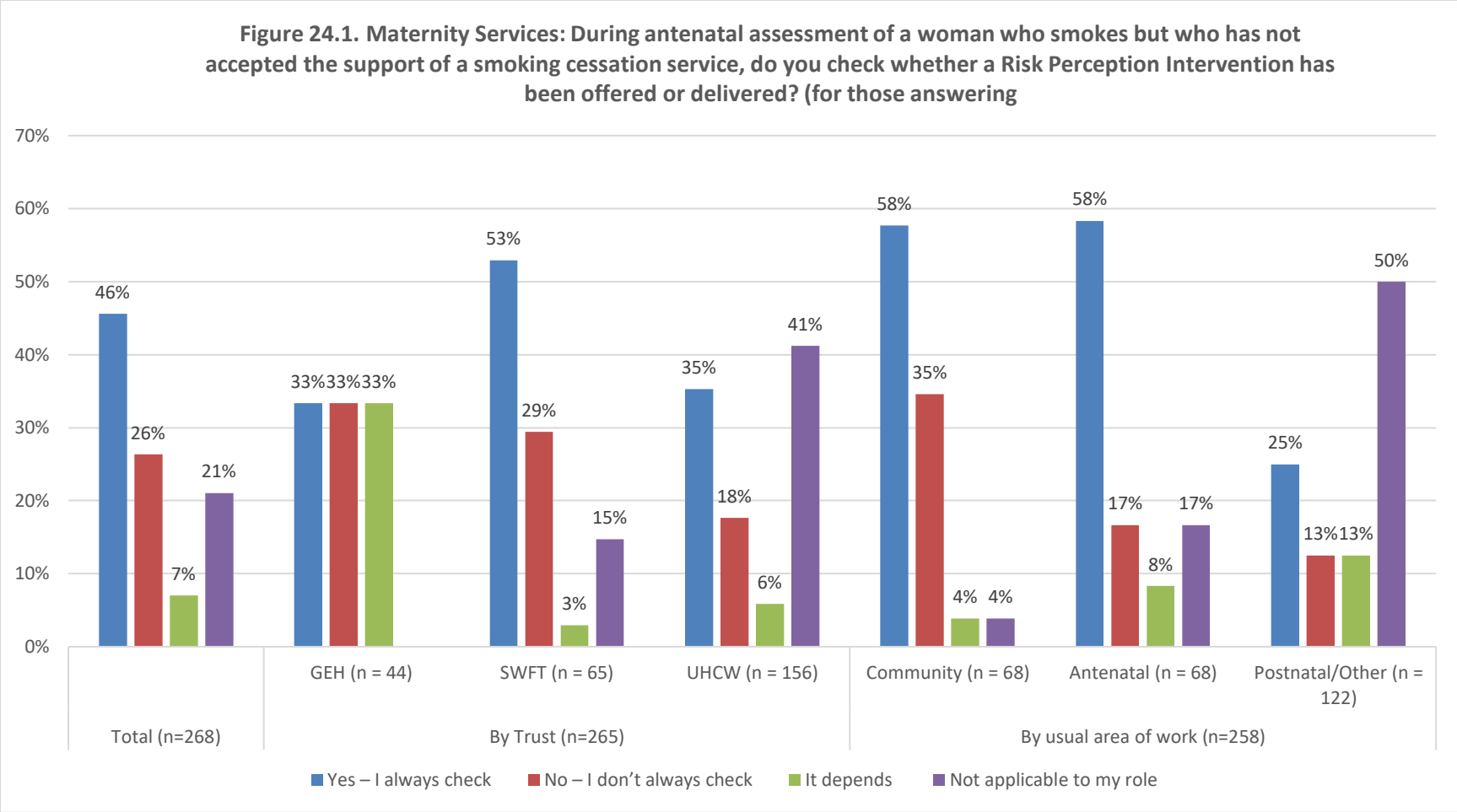
1. Risk Perception

Table 24.1. Maternity Services: During antenatal assessment of a woman who smokes but who has not accepted the support of a smoking cessation service, do you check whether a Risk Perception Intervention has been offered or delivered? (for those answering yes to Q12).

Response	Total (n=57)	By Trust (n=57):			By usual area of work (n=54)		
		GEH (n = 6)	SWFT (n = 34)	UHCW (n = 17)	Community (n = 26)	Antenatal (n = 12)	Postnatal/Other (n = 16)
Yes	26 (45.61%)	2 (33.33%)	18 (52.94%)	6 (35.29%)	15 (57.69%)	7 (58.33%)	4 (25.0%)
No	15 (26.32%)	2 (33.33%)	10 (29.41%)	3 (17.65%)	9 (34.61%)	2 (16.67%)	2 (12.5%)
Depends	4 (7.02%)	2 (33.33%)	1 (2.94%)	1 (5.88%)	1 (3.85%)	1 (8.33%)	2 (12.5%)
Not applicable	12 (21.05%)	0	5 (14.71%)	7 (41.18%)	1 (3.85%)	2 (16.67%)	8 (50.0%)

By profession (n = 58)

Not included in this table as 26.42 % of midwives, 7.79% of support workers, 0% of sonographers and 13.89% of medical professionals answered this question.



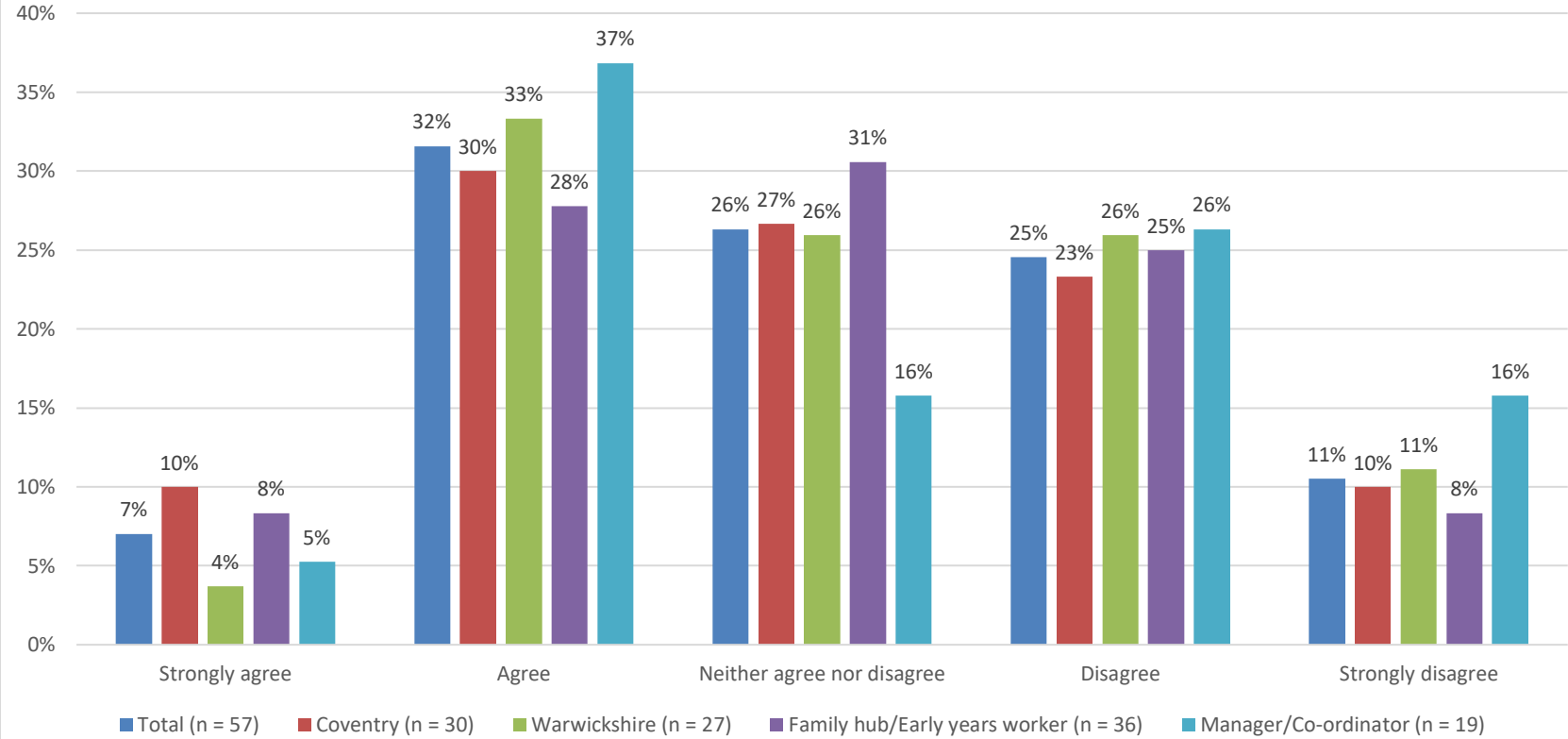
Responses to 'Please tell us here why you do not always check whether Risk Perception have been offered/delivered (optional): Don't always remember to double check, n = 1 (antenatal midwife); No time to chase-up but re-refer if aware, n = 3 (community midwives); Don't know where to find the information/didn't know about it, n = 2 (labour ward midwives)

2. Opportunities for Pre-conception advice

Table 24.2. Children and Family Centres: I use opportunities to give brief advice to women who are smoking and who might become pregnant (i.e. offering pre-conception advice)

Importance	**Total (n=57)**	**By area (n=57):**		**By role (n=55):**	
		Coventry (n = 30)	**Warwickshire (n = 27)**	**Family hub/Early years worker (n = 36)**	**Manager/Co-ordinator (n = 19)**
Strongly agree	4 (7.02%)	3 (10.0%)	1 (3.70%)	3 (8.33%)	1 (5.26%)
Agree	18 (31.58%)	9 (30.0%)	9 (33.33%)	10 (27.78%)	7 (36.84%)
Neither agree nor disagree	15 (26.32%)	8 (26.67%)	7 (25.93%)	11 (30.56%)	3 (15.79%)
Disagree	14 (24.56%)	7 (23.33%)	7 (25.93%)	9 (25.0%)	5 (26.32%)
Strongly disagree	6 (10.53%)	3 (10%)	3 (11.11%)	3 (8.33%)	3 (15.79%)

Figure 24.2. Children and Family Centres: I use opportunities to give brief advice to women who are smoking and who might become pregnant (i.e. offering pre-conception advice)

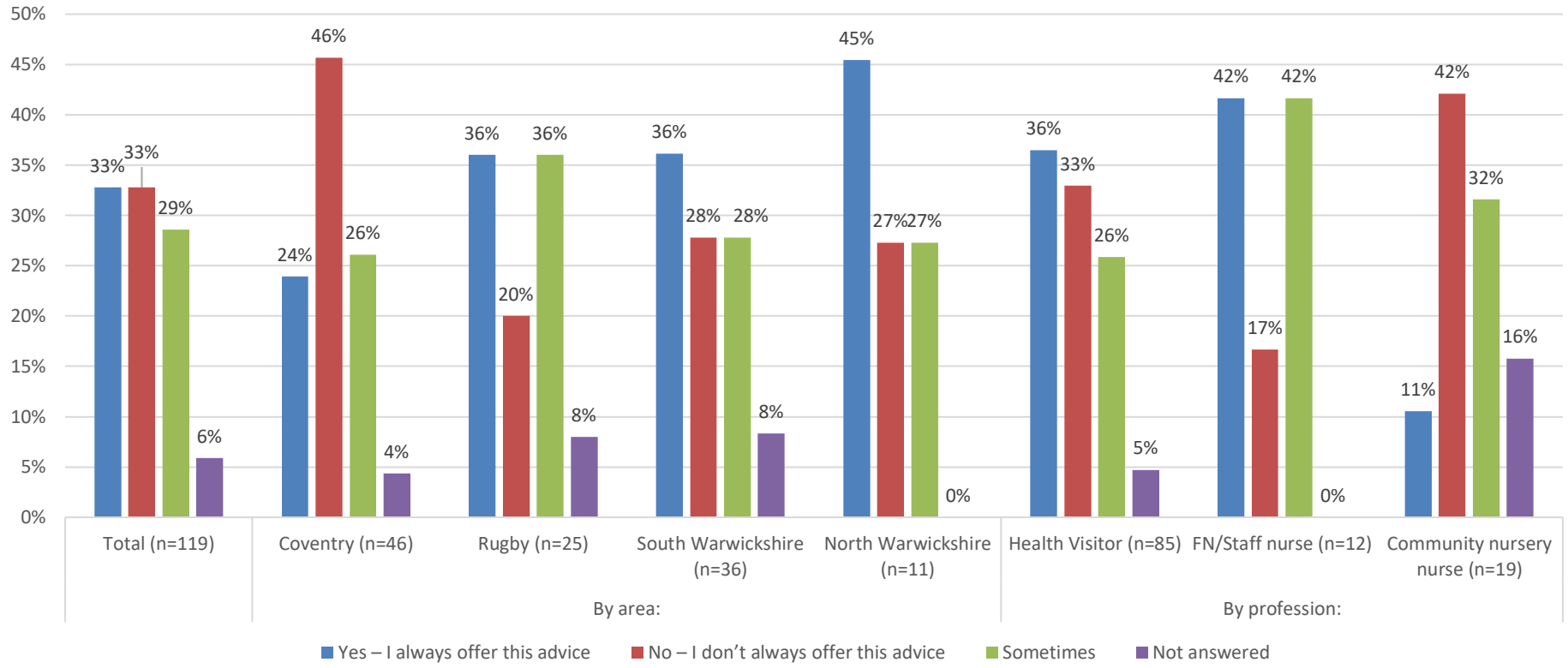


3. Relapse Prevention Advice

Table 24.3. Children and Family Centres: Do you routinely offer 'relapse prevention' advice to women who have quit smoking in pregnancy?

Response		**By area:**				**By profession:**		
	Total (n=119)	**Coventry (n=46)**	**Rugby (n=25)**	**South Warwickshire (n=36)**	**North Warwickshire (n=11)**	**Health Visitor (n=85)**	**FN/Staff nurse (n=12)**	**Community nursery nurse (n=19)**
Yes – I always offer this advice	39 (32.77%)	11 (23.91%)	9 (36.0%)	13 ((36.11%)	5 (45.45%)	31 (36.47%)	5 (41.67%)	2 (10.53%)
No – I don't always offer this advice	39 (32.77%)	21 (45.65%)	5 (20.0%)	10 (27.78%)	3 (27.27%)	28 (32.94%)	2 (16.67%)	8 (42.11%)
Sometimes	34 (28.57%)	12 (26.09%)	9 (36.0%)	10 (27.78%)	3 (27.27%)	22 ((25.88%)	5 (41.67%)	6 (31.58%)
Not answered	7 (5.88%)	2 (4.35%)	2 (8.0%)	3 (8.33%)	0	4 (4.71%)	0	3 (15.79%)

Figure 24.3. Chidren and Family Centres: Do you routinely offer 'relapse prevention' advice to women who have quit smoking in pregnancy?



Please tell us why you do not always offer relapse prevention advice to women who have quit smoking in pregnancy (n=27):
Not always appropriate/applicable: n=7; If they want advice: n=6; Individual needs: n=6; Not my role: n=3; Time constraints: n=2; Would refer to smoking cessation service: n=2; Not come across this/rarely see smokers: n=2; Opportunity/other priorities

Appendix 25 Maternity Services Assessment Framework (UHCW)

Maternity Providers Assessment Framework - UHCW

Source	Standard	Assessment	Evidence
SYSTEM/TRUST-WIDE			
CLeaR 1.6	Does SiP work feed into a Trust-wide smokefree NHS plan?	Yes Trustwide Plan. Consistent policy but not fully enforced.	ELibrary – policies See PH48 summary below
DATA COLLECTION and MONITORING			
CLeaR 1.13	Is data on smoking at time of booking routinely collected and recorded? Is this monitored in relation to the number of referrals for specialist stop smoking support?	Yes & Yes. Monthly reporting to Matron of smokers not referred to follow up with CMW	
CLeaR 1.14	Are there mechanisms in place to reduce the number of women with an 'unknown' smoking status at delivery recorded?	Yes – Separate validation of 'unknown' cases to minimise reporting of unknowns. Not fully robust.	
CLeaR 1.15	Is data on quit dates set and outcomes for pregnant women accessing stop smoking services monitored and reviewed on a regular basis?	Not by maternity services. SiP service does document in Green notes.	
CLeaR 1.15	Is data on quit dates set and outcomes for pregnant women accessing stop smoking services monitored and reviewed on a regular basis?		
CLeaR 1.16	Do you ensure that submitted SATOD data is validated and reliable?	Validations in place but not fully robust. Information systems and processes do not fully support data accuracy.	
TRAINING			
CLeaR 2.3	Are all midwives, midwifery support workers and obstetricians trained so that they have knowledge and skills to undertake practical action to address smoking in pregnancy? This includes CO monitoring and referral to stop smoking services.	Midwives & HCAs trained. Obstetricians no.	Mandatory training and quarterly meetings.

CLeaR 2.4	Are all midwives, midwifery support workers and obstetricians trained to understand the relative risk of nicotine and all nicotine containing products during pregnancy, including the Smoking in Pregnancy Challenge Group guidance on e-cigarettes in pregnancy? http://smokefreeaction.org.uk/wp-content/uploads/2017/06/eCigSIP.pdf	NRT – no formal training. Leaflets available.	
CLeaR 2.5	Do all midwives and midwifery support workers, both hospital and community based, have access to CO monitors and supplies of consumable products related to CO screening such as mouthpieces and wipes?	CMW – Yes ANC and AN wards have access but do not consistently screen and record.	
CLeaR 2.6	Are those providing specialist stop smoking interventions to pregnant women appropriately trained to relevant NCSCT standards or equivalent?	No specialist midwife in UHCW.	
TREATMENT			
CLeaR 3.1	Are all women routinely CO screened at antenatal appointments? Is this a mandatory requirement?	In community commenced routine monitoring early Nov 2019. Not in hospital.	
CLeaR 3.2	Do you operate an 'opt out' referral system, whereby all women who smoke, or have stopped smoking within the last 2 weeks, or those with elevated CO levels are referred to stop smoking support unless the woman refuses the referral? Is there a standard 'script' for use by midwives?	Refer all smokers. Elevated CO levels – refer only smokers. Now give check appliances advice.	
CLeaR 3.3	Do you have a clear referral pathway to specialist stop smoking services in place that is understood by all key partners, and which reflects NICE recommendations?	Yes	
CLeaR 3.4	Do referral pathways include feedback and follow-up processes?	Yes – letter stating whether accepted or not to CMW & GP. Document care plan in Green notes.	

CLeaR 3.5	Is there a process in place to review the effectiveness of pathways (including opt-out referral) and identify any blocks/barriers? What data is used to assess its effectiveness?	Record and report to matron - referrals. No formal monitoring of opt outs in UHCW. Receive individual patient opt outs but do not collate.	
CLeaR 3.6	Are partners/significant others who smoke identified and advised of the risk that tobacco smoke poses to pregnant women and unborn babies, and offered a referral into stop smoking support?	Yes identified but SiP service not available to partners. Signpost partners etc to other services.	
CLeaR 3.7	If women opt-out of a referral into a stop smoking service, are they provided with self-help materials? These may include written information about the harms of smoking, options for quitting as well as other materials.	CMW – yes and signposts to local SSS.	
CLeaR 3.8	Is a broad range of NRT products available on the ward for pregnant women who are hospitalised?	No	
COMMUNICATION			
CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	Not consistent. Working towards it.	
CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	Public Health messages available in GP practices – posters & video etc UH ANC smoking messages available. SBL leaflet given at booking	
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	SBL – Element 1 No specific processes to review effectiveness	
CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke,	No	

	particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.		
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception services, family planning, nurse family partnerships and others?	Feed into any opportunity for multiagency working – LMS	
CLeaR 4.6	Do you have evidence of a targeted approach to messaging around smoking in pregnancy and is this linked with pre-conception services, family planning, nurse family partnerships and others?	Not preconceptually	
SAVING BABIES LIVES: INTERVENTIONS			
	CO testing should be offered to all pregnant women at the antenatal booking appointment, with the outcome recorded	Yes 3.1	
	Additional CO testing should be offered to pregnant women as appropriate throughout pregnancy, with the outcome recorded	Yes 3.1	
	CO testing should be offered to all pregnant women at the 36 week antenatal appointment, with the outcome recorded	Yes in community setting.	
	Referral for those with elevated levels (4ppm or above) for support from a trained stop smoking specialist, based on an opt-out system. Referral pathway must include feedback and follow up processes.	Smokers only	
	All relevant maternity staff should receive training on the use of the CO monitor and having a brief	Use of monitor – Yes. VBA etc – varied experience.	

	and meaningful conversation with women about smoking (Very Brief Advice - VBA).	Gap with E cigs.	
SAVING BABIES LIVES: CONTINUOUS LEARNING			
	Maternity care providers must examine their outcomes in relation to the interventions and trends and themes within their own incidents where smoking in pregnancy is felt to have been a contributory factor.	Yes for all SGA & Stillbirth cases.	
	Individual Trusts must examine their outcomes in relation to similar Trusts to understand variation and inform potential improvements.	Limited accessibility to national data	
	Maternity providers are encouraged to focus improvement in the following areas: a. Effective identification of women who smoke during their pregnancies. b. Increase the provision of effective training of staff in relation to smoking during pregnancy. c. Working with local partners to develop effective pathways of care for referral for specialist stop smoking advice.	A Yes B Working towards C Working towards	
SAVING BABIES LIVES: PROCESS INDICATORS			
	i. Recording of CO reading for each pregnant woman on Maternity Information System (MIS) and inclusion of these data in the providers' Maternity Services Data Set (MSDS) submission to NHS Digital. ii. Percentage of women where CO measurement at booking is recorded. iii. Percentage of women where CO measurement at 36 weeks is recorded.	These will be analysed through data analysis for the review (subject to DSA being approved) Yes to all – via tariff database	
SAVING BABIES LIVES: OUTCOME INDICATORS			

	i. Percentage of women with a CO measurement ≥4ppm at booking. **ii.** ii. Percentage of women with a CO measurement ≥4ppm at 36 weeks. **iii.** iii. Percentage of women who have a CO level ≥4ppm at booking and at the 36 week appointment	These will be analysed through data analysis for the review (subject to DSA being approved) Yes to all	
SAVING BABIES LIVES: ASSESSMENT of FGR			
	Current smoker at booking (any) is at moderate risk of FGR and should serial growth scans every 4 weeks from 32 weeks until delivery	Not all smokers. Routing SFH measurements but not routine FGR scanning currently. Under review.	
CHALLENGE GROUP RECOMMENDATIONS			
	Public Health England and NHS England should support local leadership to tackle smoking in pregnancy through Local Maternity Systems and the promotion of Smokefree Pregnancy Champions in every local area.	No champions within Trust.	
	Local authorities, CCGs and Trusts should explore ways to work collaboratively across LMS footprint to realise economies of scales in implementing NICE guidance on smoking in pregnancy	Yes via LMS and review	
TOBACCO CONTROL COLLABORATING CENTRE KPIs			
	For women who do not engage in SSiP Service following CO monitoring/referral >75% should be offered the Risk Perception Intervention (RPI)	To be implemented	
	Of those receiving the RPI >50% should subsequently accept support through the SSiP Service.	To be implemented	

Appendix 26 UHCW PH48 Standards

TRUST NAME: UHCW

PH 48 Standard	Response requested	Trust response
Clinical or medical director lead identified for Smoking Cessation/Smokefree policy development	Yes/No/Other response?	Yes
Smokefree policies in place	Yes/No If 'Yes' date of most recent policy	Yes March 2020
An Annual Improvement Plan relating to smoking cessation (eg by clinical area) is developed	Yes/No If 'Yes' date of most recent plan	No
On-site smoking cessation service provided	Yes/No If 'Yes' – does the service cover all clinical areas or a select group (if a select group, please specify which areas)	Yes, it covers in and out patients, staff and relatives if required for the Coventry area. Any individual outside of Coventry is appropriately signposted
Electronic referral system in place from Trust to local smoking cessation provider(s)	Yes/No/Other response?	Yes
Provision of full range of NRT/pharmacotherapies (short	Yes/No/Other response?	Only nicotine patches currently as in patient. Vouchers are offered on discharge for other NRT

and long-acting NRT products plus bupropion and varenicline)	If 'Yes' provide list of products available.	
Provision of staff training in smoking cessation and/or MECC	Yes/No/Other response If 'Yes' is this part of the Trust's mandatory training programme?	Yes to cascade trainers. We are planning to include this in induction programmes going forward
Are staff provided with support/access to Stop Smoking Services?	Yes/No/Other response If 'Yes' briefly specify the support provided	Yes. We offer 1:1 support where possible
Is information and advice in relation to smoking/smoking cessation available to patients, carers, families and others in the hospital environment.	Yes/No/Other response If 'Yes' briefly describe what is provided	Yes. We have posters and business cards in all areas

Appendix 27 Maternity Services Assessment Framework (SWFT)

Maternity Providers Assessment Framework SWFT

Source	Standard	Assessment	Evidence
SYSTEM/TRUST-WIDE			
CLeaR 1.6	Does SiP work feed into a Trust-wide smokefree NHS plan?	SWFT is smokefree and maternity advice is consistent with Trust policy.	The Trust has a Smokefree policy and there is a Trust SiP Guideline
DATA COLLECTION and MONITORING			
CLeaR 1.13	Is data on smoking at time of booking routinely collected and recorded? Is this monitored in relation to the number of referrals for specialist stop smoking support?	Yes. Data is routinely collected/recorded. Monthly reconciliation, all smokers referred for consultant care and referred to SSS.	Note to CMW on Badgernet 'check CO at every appt.'
CLeaR 1.14	Are there mechanisms in place to reduce the number of women with an 'unknown' smoking status at delivery recorded?	Recording is mandatory	Badgernet
CLeaR 1.15	Is data on quit dates set and outcomes for pregnant women accessing stop smoking services monitored and reviewed on a regular basis?	Rely on SiP service to do this. SiP service notify CMW of women who 'declined service'	
CLeaR 1.16	Do you ensure that submitted SATOD data is validated and reliable?	Every SATOD record for smokers/unknown/smoked at booking is cross-referenced with 36-week CO value (ie did non-smoker at ToD have low 36-week CO value?)	
TRAINING			
CLeaR 2.3	Are all midwives, midwifery support workers and obstetricians trained so that they have knowledge and skills to undertake practical action to address smoking in pregnancy? This includes CO monitoring and referral to stop smoking services.	SiP is included in the mandatory training programme (45 mins once every 2 years provided by SSIPS Team & Risk Perception). Training includes: Risks to baby, VBA, CO monitoring, Referral to SiP, E-Cigs	Compliance records indicate 66% compliant for midwives.

		and Risk Perception. (NRT not included in most recent update) Support workers and administrative staff do not currently receive training The doctors do not get any formal training on smoking cessation in pregnancy through the Trust but some may choose to get training as part of their own professional development. Sonographers do not get any training unless they are midwife sonographers (2 midwife sonographers).	No records of staff training outside mandatory training for midwives are kept.
CLeaR 2.4	Are all midwives, midwifery support workers and obstetricians trained to understand the relative risk of nicotine and all nicotine containing products during pregnancy, including the Smoking in Pregnancy Challenge Group guidance on e-cigarettes in pregnancy? http://smokefreeaction.org.uk/wp-content/uploads/2017/06/eCigSIP.pdf	As above	
CLeaR 2.5	Do all midwives and midwifery support workers, both hospital and community based, have access to CO monitors and supplies of consumable products related to CO screening such as mouthpieces and wipes?	All CMW and ante natal clinic/ ante natal assessment staff have CO monitors with access to consumables. IP wards may have access to a CO monitor but are not checking CO Post Nataly. Early Pregnancy Assessment Unit (EPAU) do not currently use CO monitors.	Machines are not calibrated or routinely checked (not necessary)
CLeaR 2.6	Are those providing specialist stop smoking interventions to pregnant women appropriately trained to relevant NCSCT standards or equivalent?	RP midwives x 2 have done babyclear training (including RPI), 2 day SS practical course and on-line NCST NRT course.	
TREATMENT			
CLeaR 3.1	Are all women routinely CO screened at antenatal appointments? Is this a mandatory requirement?	Yes. Achieving 95%. Audited every month.	

CLeaR 3.2	Do you operate an 'opt out' referral system, whereby all women who smoke, or have stopped smoking within the last 2 weeks, or those with elevated CO levels are referred to stop smoking support unless the woman refuses the referral? Is there a standard 'script' for use by midwives?	Opt-out referrals for all smokers at booking….for which a script is available (but ? used by all staff). Referral of quit in last 2 weeks likely to depend on CO reading (low reading may not be referred).	Script included in guideline
CLeaR 3.3	Do you have a clear referral pathway to specialist stop smoking services in place that is understood by all key partners, and which reflects NICE recommendations?	Yes. Referral pathway in place	
CLeaR 3.4	Do referral pathways include feedback and follow-up processes?	Yes. SiP provider notifies non-attenders. A note is placed on Badgernet 'Check CO at next appt'	
CLeaR 3.5	Is there a process in place to review the effectiveness of pathways (including opt-out referral) and identify any blocks/barriers? What data is used to assess its effectiveness?	Pathway audited every month. Was SiP referral made? Note to CMW if not. Check all smokers and CO greater than 4 at booking – note to CMW if action required	
CLeaR 3.6	Are partners/significant others who smoke identified and advised of the risk that tobacco smoke poses to pregnant women and unborn babies, and offered a referral into stop smoking support?	Smoking of partners/SOs checked at booking and also by SiP provider. Sign-post to SSS (support provided if woman accesses SiP support and partner present)	
CLeaR 3.7	If women opt-out of a referral into a stop smoking service, are they provided with self-help materials? These may include written information about the harms of smoking, options for quitting as well as other materials.	If SiP provider can't contact woman, advice pack posted out.	*Need to check what leaflets used at booking*
CLeaR 3.8	Is a broad range of NRT products available on the ward for pregnant women who are hospitalised?	No access to NRT on wards.	
Tobacco Control Collaborating Centre	Is the Risk Perception Intervention provided? Are staff aware of RPI offer? Is RPI delivered to >75% of smokers not accepting SiP support?	Yes – RPI is offered at the 16-week appt to smokers who do not access SiP services RPI is delivered to >75% of smokers not accepting SiP support	

	Are 50% of those in receipt of RPI accessing SSS?	Survey will confirm staff awareness of RPI Current monitoring indicates 33% of those receiving RPI engage with SiP service.	
COMMUNICATION			
CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	This is an aspiration – and is considered to be an improving situation, although no concrete evidence of consistent messaging and some feedback indicating mixed messages.	
CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	Scope for improvement. There are notice boards within the Trust used for messaging and there was for example a Stoptober display, but no widespread messaging and no communication or knowledge of provision in General Practice. More could be done within Trust eg. more information and SiP advice available in the Early Pregnancy Assessment Unit.	
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	No review process in place. Current staff survey will help clarify effectiveness of processes to date.	
CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke, particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.	No. No mechanism in place within the Trust. Anecdotally there are women who just 'do not want to or think they cannot quit' Do look at national evidence.	
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception services, family planning, nurse family partnerships and others?	Considered to be LMS responsibility in the main, but do try to ensure a Trust-wide approach – but 'more to do'	

CLeaR 4.6	Do you have evidence of a targeted approach to messaging around smoking in pregnancy and is this linked with pre-conception services, family planning, nurse family partnerships and others?	There are targeted messages provided by professionals within the Trust, but responsibility for wider partnership is beyond Trust remit.	
SAVING BABIES LIVES: INTERVENTIONS			
	CO testing should be offered to all pregnant women at the antenatal booking appointment, with the outcome recorded	As above - CLeaR 3.1	
	Additional CO testing should be offered to pregnant women as appropriate throughout pregnancy, with the outcome recorded	A 'task' is recommended to CMW on Badgernet, but no evidence to say repeat CO measurements are undertaken. Forthcoming SiP case note audit will provide an indication of compliance.	
	CO testing should be offered to all pregnant women at the 36-week antenatal appointment, with the outcome recorded	Mandatory – expectation it will be completed for all. Currently at 85% compliance. Performance is checked monthly and staff not undertaking checks are contacted.	
	Referral for those with elevated levels (4ppm or above) for support from a trained stop smoking specialist, based on an opt-out system. Referral pathway must include feedback and follow up processes.	Yes, although those with reading of >=4ppm who claim not to smoke, clinical judgement is applied in determining whether a SiP referral is made. Referral if CO is above 4 if they are a smoker - otherwise advice given re boiler/cars/lactose intolerance /false positive results.	
	All relevant maternity staff should receive training on the use of the CO monitor and having a brief and meaningful conversation with women about smoking (Very Brief Advice - VBA).	As above - CLeaR 2.3	
SAVING BABIES LIVES: CONTINUOUS LEARNING			
	Maternity care providers must examine their outcomes in relation to the interventions and trends and themes within their own incidents where smoking in pregnancy is felt to have been a contributory factor.	CG midwife looks at factors associated with stillbirth and LBW babies. Smoking may be picked up as a contributory factor in the some of the following: · SGA(small for gestational age) audits	

		· PMRT(perinatal mortality review tool) when an incident occurs · Rapid reviews by the senior team following incidents · Term admissions to SCBU audits The findings from these audits & reviews are fed-back to the team as learning points to enable improvement practice. The service receives information from the Perinatal Institute on SGA detection rates which compares with peer units.	
	Individual Trusts must examine their outcomes in relation to similar Trusts to understand variation and inform potential improvements.	Summary statistics for SWFT deliveries smokers vs non-smokers are collated (n and % of births <10th centile, <20th centile, preterm SCBU at term, IV antibiotics, stillbirths) No comparison with 'like' Trusts or CCGs currently undertaken but Perinatal Institute SGA comparisons are reviewed.	
	Maternity providers are encouraged to focus improvement in the following areas: a. Effective identification of women who smoke during their pregnancies. b. Increase the provision of effective training of staff in relation to smoking during pregnancy. c. Working with local partners to develop effective pathways of care for referral for specialist stop smoking advice.	Do identify women who smoke in pregnancy, have scope to do more training, do work with partners to deliver effective pathway.	
SAVING BABIES LIVES: PROCESS INDICATORS			
	ii. Recording of CO reading for each pregnant woman on Maternity Information System (MIS) and inclusion of these data in the providers' Maternity	These will be analysed through data analysis for the review (subject to DSA being approved) iii. Ranges 95% to 98%	

	Services Data Set (MSDS) submission to NHS Digital. ii. Percentage of women where CO measurement at booking is recorded. iii. Percentage of women where CO measurement at 36 weeks is recorded.	iv. Ranges 81% to 86%	
SAVING BABIES LIVES: OUTCOME INDICATORS			
	iv. Percentage of women with a CO measurement ≥4ppm at booking. **v.** ii. Percentage of women with a CO measurement ≥4ppm at 36 weeks. **vi.** iii. Percentage of women who have a CO level ≥4ppm at booking and at the 36 week appointment	These will be analysed through data analysis for the review (subject to DSA being approved) Have started to audit action for those CO >=4ppm in 'non-smokers'	
SAVING BABIES LIVES: ASSESSMENT of FGR			
	Current smoker at booking (any) is at moderate risk of FGR and should serial growth scans every 4 weeks from 32 weeks until delivery	SWFT provide scans from 28weeks gestation (ie SBL v1 recommendation)	
CHALLENGE GROUP RECOMMENDATIONS			
	Public Health England and NHS England should support local leadership to tackle smoking in pregnancy through Local Maternity Systems and the promotion of Smokefree Pregnancy Champions in every local area.	No registered smokefree champion ATM	
	Local authorities, CCGs and Trusts should explore ways to work collaboratively across LMS footprint to realise economies of scales in implementing NICE guidance on smoking in pregnancy	Review is seeking to do this	

Appendix 28 Maternity Services Assessment Framework (GEH)

Maternity Providers Assessment Framework: GEH

Source	Standard	Assessment
SYSTEM/TRUST-WIDE		
CLeaR 1.6	Does SiP work feed into a Trust-wide smokefree NHS plan?	Trust guideline is out of date, but in theory the Trust is smokefree
DATA COLLECTION and MONITORING		
CLeaR 1.13	Is data on smoking at time of booking routinely collected and recorded? Is this monitored in relation to the number of referrals for specialist stop smoking support?	The policy is that it should be routinely collected. Monitoring has recently been introduced and this is showing a 30% shortfall in referrals vs smokers at booking
CLeaR 1.14	Are there mechanisms in place to reduce the number of women with an 'unknown' smoking status at delivery recorded?	None at the moment. It is a mandatory field but there is a suspicion that an assumption may be made (ie the status at delivery is the same as at booking)
CLeaR 1.15	Is data on quit dates set and outcomes for pregnant women accessing stop smoking services monitored and reviewed on a regular basis?	SSiP service does this and feeds back to service
CLeaR 1.15	Is data on quit dates set and outcomes for pregnant women accessing stop smoking services monitored and reviewed on a regular basis?	Referral details are not put onto Lorenzo so no easy way to do this
CLeaR 1.16	Do you ensure that submitted SATOD data is validated and reliable?	Limited validation – could cross reference with 36 week CO measurement but this is only undertaken for approximately 50% of women
TRAINING		
CLeaR 2.3	Are all midwives, midwifery support workers and obstetricians trained so that they have knowledge and skills to undertake practical action to address smoking in pregnancy? This includes CO monitoring and referral to stop smoking services.	For midwives and maternity support workers SiP training became mandatory last year. It includes CO monitoring and referral process. No training provided for obstetricians

CLeaR 2.4	Are all midwives, midwifery support workers and obstetricians trained to understand the relative risk of nicotine and all nicotine containing products during pregnancy, including the Smoking in Pregnancy Challenge Group guidance on e-cigarettes in pregnancy? http://smokefreeaction.org.uk/wp-content/uploads/2017/06/eCigSIP.pdf	Included in above
CLeaR 2.5	Do all midwives and midwifery support workers, both hospital and community based, have access to CO monitors and supplies of consumable products related to CO screening such as mouthpieces and wipes?	All wards and departments have CO monitors – but uncertain about usage. Efforts are being made to promote use of monitors on wards. CO monitoring is being undertaken by CMWs – 90% coverage
CLeaR 2.6	Are those providing specialist stop smoking interventions to pregnant women appropriately trained to relevant NCSCT standards or equivalent?	DF is trained in delivering the Risk Perception Intervention Some midwives have done on-line NCST training
TREATMENT		
CLeaR 3.1	Are all women routinely CO screened at antenatal appointments? Is this a mandatory requirement?	It is mandatory at booking but not thereafter.
CLeaR 3.2	Do you operate an 'opt out' referral system, whereby all women who smoke, or have stopped smoking within the last 2 weeks, or those with elevated CO levels are referred to stop smoking support unless the woman refuses the referral? Is there a standard 'script' for use by midwives?	Opt out is the policy – but inconsistent practice. Should also include those quit in last 2 weeks but again some uncertainty about practice. There is a standard script in the LMS guideline but some evidence that this is not being universally used (ie 30% shortfall in referrals)
CLeaR 3.3	Do you have a clear referral pathway to specialist stop smoking services in place that is understood by all key partners, and which reflects NICE recommendations?	Clear pathway for community staff, but still paper-based rather than electronic referrals. It has been estimated that on occasion it could take one month for the referral to reach the SSiP service.
CLeaR 3.4	Do referral pathways include feedback and follow-up processes?	Work in progress – system is just being established

CLeaR 3.5	Is there a process in place to review the effectiveness of pathways (including opt-out referral) and identify any blocks/barriers? What data is used to assess its effectiveness?	Some processes are in place. 'Out of area' women are removed from denominator. Can check who has bee CO tested but not whether a referral has been made. Do compile a list of CMWs who do not undertake CO monitoring or where there is no record of smoking status. This is followed up by community manager and governance.
CLeaR 3.6	Are partners/significant others who smoke identified and advised of the risk that tobacco smoke poses to pregnant women and unborn babies, and offered a referral into stop smoking support?	Is on 'green notes' but uncertain about completion.
CLeaR 3.7	If women opt-out of a referral into a stop smoking service, are they provided with self-help materials? These may include written information about the harms of smoking, options for quitting as well as other materials.	Booking pack does include SiP information
CLeaR 3.8	Is a broad range of NRT products available on the ward for pregnant women who are hospitalised?	No NRT is provided in maternity services
COMMUNICATION		
CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	This is an aspiration but informal evidence indicates this is not happening in practice. Doctors do not receive training
CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	Trust website information for patients was updated to include SiP messages, but unclear whether this was adopted by Trust. Notice boards in process of being updated and do a 'stoptober' display for example. Plans to place large poster in foyer (close by where smokers congregate)
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	Through quarterly newsletter suggestions from staff are encouraged. Expected that this review will help.

CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke, particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.	No mechanism for this.
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception services, family planning, nurse family partnerships and others?	There is a multi-agency group supporting GEH to reduce SiP and there is contribution to multiagency work through the LMS group. DF's role within the Trust is to champion and promote – but limited time. Evidence from review will help, needs to go to Trust Board and Audit committee.
CLeaR 4.6	Do you have evidence of a targeted approach to messaging around smoking in pregnancy and is this linked with pre-conception services, family planning, nurse family partnerships and others?	LMS expected to lead on wider partnership engagement
SAVING BABIES LIVES: INTERVENTIONS		
	CO testing should be offered to all pregnant women at the antenatal booking appointment, with the outcome recorded	As above
	Additional CO testing should be offered to pregnant women as appropriate throughout pregnancy, with the outcome recorded	Some are offered repeat testing
	CO testing should be offered to all pregnant women at the 36 week antenatal appointment, with the outcome recorded	Estimated that 50% of women are offered 36 week CO
	Referral for those with elevated levels (4ppm or above) for support from a trained stop smoking specialist, based on an opt-out system. Referral pathway must include feedback and follow up processes.	As above

	All relevant maternity staff should receive training on the use of the CO monitor and having a brief and meaningful conversation with women about smoking (Very Brief Advice - VBA).	Doctors not trained VBA included in mandatory training but is brief. VBA training was provided but no midwives attended.
SAVING BABIES LIVES: CONTINUOUS LEARNING		
	Maternity care providers must examine their outcomes in relation to the interventions and trends and themes within their own incidents where smoking in pregnancy is felt to have been a contributory factor.	The CG midwife does look on a monthly basis at SGA and stillbirths – looking for contributor factors, including smoking
	Individual Trusts must examine their outcomes in relation to similar Trusts to understand variation and inform potential improvements.	Unsure about Trust comparisons
	Maternity providers are encouraged to focus improvement in the following areas: a. Effective identification of women who smoke during their pregnancies. b. Increase the provision of effective training of staff in relation to smoking during pregnancy. c. Working with local partners to develop effective pathways of care for referral for specialist stop smoking advice.	In progress but scope for improvement
SAVING BABIES LIVES: PROCESS INDICATORS		
	v. Recording of CO reading for each pregnant woman on Maternity Information System (MIS) and inclusion of these data in the providers' Maternity Services Data Set (MSDS) submission to NHS Digital. ii. Percentage of women where CO measurement at booking is recorded.	These will be analysed through data analysis for the review i. MSDS submission is made ii. 90% iii. 50%

	iii. Percentage of women where CO measurement at 36 weeks is recorded.	
SAVING BABIES LIVES: OUTCOME INDICATORS		
	vii. Percentage of women with a CO measurement ≥4ppm at booking. **viii.** ii. Percentage of women with a CO measurement ≥4ppm at 36 weeks. **ix.** iii. Percentage of women who have a CO level ≥4ppm at booking and at the 36 week appointment	These will be analysed through data analysis for the review
SAVING BABIES LIVES: ASSESSMENT of FGR		
	Current smoker at booking (any) is at moderate risk of FGR and should serial growth scans every 4 weeks from 32 weeks until delivery	Understood to be improving
CHALLENGE GROUP RECOMMENDATIONS		
	Public Health England and NHS England should support local leadership to tackle smoking in pregnancy through Local Maternity Systems and the promotion of Smokefree Pregnancy Champions in every local area.	DF is signed up as champion, but champions are needed across the organisation, including at Trust Board.
	Local authorities, CCGs and Trusts should explore ways to work collaboratively across LMS footprint to realise economies of scales in implementing NICE guidance on smoking in pregnancy	Anticipated through this review
TOBACCO CONTROL COLLABORATING CENTRE KPIs		
	For women who do not engage in SSiP Service following CO monitoring/referral >75% should be offered the Risk Perception Intervention (RPI)	Although RPI has started to be delivered, the 75% target has not been achieved
	Of those receiving the RPI >50% should subsequently accept support through the SSiP Service.	Currently unknown

Appendix 29 SSiP Services Assessment Framework (Warwickshire)

Stop Smoking Provider Assessment Framework: Warwickshire SSiP Service

Source	Standard	Assessment
STOP SMOKING INTERVENTIONS		
CLeaR 3.9	Are pregnant women who are referred for stop smoking support contacted within one working day of referral and offered an initial appointment within a week? Is this a contractual requirement?	The aim is to contact women within **two working days** of receipt of referral and to offer an initial appointment within **2 weeks** of receipt of referral
CLeaR 3.10	Does your local stop smoking service follow NICE guidance in terms of attempting to contact pregnant women who have been referred into this service? Examples of this are, at least two attempted phone calls, a follow-up letter an attempts to see women who have not responded at subsequent antenatal appointments.	NICE guidance is followed but rather than 3 attempts at contact a total of **6 attempts** are made
CLeaR 3.11	Are stop smoking services flexible in terms of times and locations of support, to make them easily accessible to meet individual need?	Yes – appointments between 8am to 8pm M to F – in own home, clinic, children centre etc
CLeaR 3.12	Are alternative means of support provided to women who are unwilling to attend face to face sessions with a stop smoking advisor? This may include peer support, text services, telephone, self-help materials.	Text messages, telephone and self-help materials are offered in place of face to face appointments. Peer support is not available.
CLeaR 3.13	Is there easy access back into services if women relapse during pregnancy, and does the service have regular follow-up with pregnant women up to 3 months post-partum?	There is easy access back for women who relapse during pregnancy and/or up to 15 days post-natal. If a woman has remained a quitter and contacts the service post-natally reporting cravings/danger of relapse further NRT cannot be provide (although such women could have a remaining supply from their quit attempt). Post 15-day contact has to be sign-posted to GP and/or pharmacist.
COMMUNICATION		

CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	Smoking service team do and they attempt to encourage all HCPs to do likewise, but this cannot be assured.
CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	The service provides posters in all maternity areas, and access to leaflets and videos. The service has also done radio interviews to contribute to messaging. There is no contact with those planning pregnancy
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	No review process within the service.
CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke, particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.	Don't have mechanisms to reach those who do not engage with services. Have used previous PH led behavioural insight work to inform the development of leaflets (CO and service leaflet).
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception services, family planning, nurse family partnerships and others?	The service provides training sessions on maternity mandatory training programmes – accessed by midwives/maternity support workers. HVs are provided with the link to NCSCT on-line training. FNP services are also provided with training, but pre-conception services, family planning and other professionals are not included.
CLeaR 4.6	Do you have evidence of a targeted approach to messaging around smoking in pregnancy and is this linked with pre-conception services, family planning, nurse family partnerships and others?	A lot of this type of activity was undertaken in the past, when there was more promotion activity led by PH.

Appendix 30 SSiP Services Assessment Framework (Coventry)

Stop Smoking Provider Assessment Framework: Coventry SSiP Service

Source	Standard	Assessment
STOP SMOKING INTERVENTIONS		
CLeaR 3.9	Are pregnant women who are referred for stop smoking support contacted within one working day of referral and offered an initial appointment within a week? Is this a contractual requirement?	The target is to contact women **2 working days** after referral and to provide an appointment within **2 weeks of referral**
CLeaR 3.10	Does your local stop smoking service follow NICE guidance in terms of attempting to contact pregnant women who have been referred into this service? Examples of this are, at least two attempted phone calls, a follow-up letter an attempts to see women who have not responded at subsequent antenatal appointments.	Yes. 3 attempted phone calls, a text message and then a 'hard to reach' letter is sent with an appointment.
CLeaR 3.11	Are stop smoking services flexible in terms of times and locations of support, to make them easily accessible to meet individual need?	Yes. Home visits is the most common method of service provision but make appointments in other community venues to suit the client.
CLeaR 3.12	Are alternative means of support provided to women who are unwilling to attend face to face sessions with a stop smoking advisor? This may include peer support, text services, telephone, self-help materials.	Can offer telephone support where this is preferred.
CLeaR 3.13	Is there easy access back into services if women relapse during pregnancy, and does the service have regular follow-up with pregnant women up to 3 months post-partum?	Yes, there is easy access for women who relapse during pregnancy, but only one visit with 2 weeks post-partum.
COMMUNICATION		
CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	Smoking service staff do
CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An	Work with family hubs, FNP and HV and Mamta services.

	example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	Use national documents where these are available – these are being reviewed through the SiP T&F group.
CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke, particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.	The service does not undertake any specific work but feedback from midwives suggests that some women do not want to stop, others blame 'stress' for not being able to and for others mental health issues are a factor in continued smoking.
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception services, family planning, nurse family partnerships and others?	Participating in LMS commissioned review, liaise with maternity staff, not specifically doing work around pre-conception, except through 12 to 18s service commissioned by Coventry PH.
CLeaR 4.6	Do you have evidence of a targeted approach to messaging around smoking in pregnancy and is this linked with pre-conception services, family planning, nurse family partnerships and others?	Do work with other partners such as Mamta, FNP, iBumps. Also link with social services, domestic violence groups and family hubs.

Appendix 31 Public Health Assessment Framework (Coventry)

Coventry Public Health

Source	Standard	Assessment
SYSTEM-WIDE PARTNERSHIP WORKING		
CLeaR 1.6	Does SiP work feed into a Trust-wide smokefree NHS plan?	Work is underway to strengthen Trust-wide smokefree plans through the process to refresh the local Tobacco Control Plan.
CLeaR 1.7	Is smoking in pregnancy addressed in local health improvement plans? For example at Health and Wellbeing Strategy and in CCG Strategic/Business Plans, Tobacco Control Plan, JSNA, Service delivery improvement plans, STP plans?	SiP is not explicitly referenced in the JSNA, or in the H&WB strategy. The TCP 2015-20 does include pregnant smokers as a key priority group. An event was held in October 2019 to explore next steps in terms of TC and the LTP. There are plans to further develop local plans through joint system-wide work across C&W.
CLeaR 1.8	Has a smoking in pregnancy needs assessment or Health Equity Audit been completed?	SiP review in progress
CLeaR 1.9	Do you understand the needs of all communities in relation to smoking in pregnancy within your defined geographical area?	Steps have been undertaken to better understand SiP at a local level, for example SATOD is monitored at Family Hub level. Further work is required to translate this into activity to address SiP but the expectation is that joint work with SWFT will take place. For example SiP could be incorporated into the Parent Leadership Programme.
CLeaR 1.10	Has an audit of implementation of NICE guidance PH26 and PH48 (where relevant to maternity provision) been undertaken? Is there an agreed action plan in place?	Audit of PH26 will be undertaken as part of the review and this will inform an action plan. A response from UHCW (appendix 26) and CWPT in terms of implementation of PH48 has been received and will inform the TCP.
CLeaR 1.11	Do contracts for midwifery services specify actions to address smoking in pregnancy?	For CCG to address but understanding is the current specification is out of date (to be picked up with CCG/LMS)
CLeaR 1.12	Are local stop smoking services commissioned to provide interventions for pregnant women who smoke?	Yes – there is a specialist service.
DATA COLLECTION and MONITORING		

CLeaR 1.13	Is data on smoking at time of booking routinely collected and recorded? Is this monitored in relation to the number of referrals for specialist stop smoking support?	Smoking at booking is recorded by maternity services but is not currently shared. To be picked up through SiP review in terms of future monitoring requirements.
CLeaR 1.14	Are there mechanisms in place to reduce the number of women with an 'unknown' smoking status at delivery recorded?	Maternity services are working towards reducing 'unknowns' but likely to be a bigger issue with inaccurate data (eg. those who have quit during pregnancy being recorded through SATOD as smokers)
CLeaR 1.15	Is data on quit dates set and outcomes for pregnant women accessing stop smoking services monitored and reviewed on a regular basis?	Outcomes are assessed through quarterly review however there is a recognised need to do more work with the service around outcomes and this is being discussed e.g. ensuring that HV are informed of those who have accessed SSiP services to ensure follow up at mandated checks so that we can provide additional support for those that replace. We also want to understand how many do relapse.
CLeaR 1.16	Do you ensure that submitted SATOD data is validated and reliable?	Expected that Trusts are responsible for this (but there are concerns that the data is not reliable. Attempts to validate SATOD data through the data submitted for the SiP review (eg cross referencing with 36 week smoking status) will be undertaken.
CLeaR 3.5	Is there a process in place to review the effectiveness of pathways (including opt-out referral) and identify any blocks/barriers? What data is used to assess its effectiveness?	This will be looked at through the SiP review. The need for future routine data monitoring will be recommended through the review.
CLeaR 3.8	Is a broad range of NRT products available on the ward for pregnant women who are hospitalised?	No. This needs to be picked up by CCG commissioners (ties into implementation of PH48).
COMMUNICATION		
CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	Family lifestyle services, FNP and HVs are understood to be consistent in their messaging around SiP. The review process indicates a concern about consistency of messaging among some broader primary and secondary care clinicians.

CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	The SiP service leads on messaging in relation to SiP at a local level. The use of national resources is promoted. The role/contribution of apps is also being explored (recognising that these need to be NHS recommended for assurance purposes). There is a gap in terms of targeting pre-conception messages to either women and/or clinicians delivering 'pre-conception' services.
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	Not specifically although there have been discussions about the use of apps and the use of plasma screens in GP surgeries and other settings to improve communication around the harms of SiP and the services available.
CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke, particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.	No. However it is recognised that the views of pregnant smokers – especially those who do not engage with services will need to be sought as part of reconfiguration of services (ie reconfiguration will be necessary as part of NHS LTP investment).
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception services, family planning, nurse family partnerships and others?	This has been achieved to an extent through commissioning a combined HV/FNP/Lifestyles service working with the Family Hubs. However recognised that professionals working in primary care, sexual health and other preconception services have not been reached through work to date.
CHALLENGE GROUP RECOMMENDATIONS		
	Public Health England should work with local authorities to ensure that local strategies reduce rates of smoking among the most disadvantaged and that families who need to can access stop smoking support before, during and after pregnancy.	Family Hubs have been focussed on understanding the needs of their local populations – with a particular focus on meeting the needs of more deprived populations that will include smokers.
	Public Health England and NHS England should support local leadership to tackle smoking in	Would be supportive of such a development (likely to be a recommendation through the review)

	pregnancy through Local Maternity Systems and the promotion of Smokefree Pregnancy Champions in every local area.	
	Local authorities, CCGs and Trusts should explore ways to work collaboratively across LMS footprint to realise economies of scales in implementing NICE guidance on smoking in pregnancy	Will be looking for opportunities to do this through the review.
	Where smoking rates are high national and local government and NHS organisations should seek to better engage a wider group of health and care professionals in reducing rates of smoking in pregnancy, and to engage whole household not only pregnant women. Approaches should include: • Improve training to better engage with families who smoke • Supporting pilots to gain a better understanding of how a wider group of professionals, in particular Health Visitors, can motivate more parents who smoke to quit m • Engaging commissioners in efforts to explore how professionals can be best supported to deliver brief advice within existing contracts • Producing materials to support professionals in their engagement with families. m • Supporting pilot activity to better understand how peer support	Recognise the need to focus around household smoking and SiP service do provide some support (ie support partners to quit) Recognise opportunity for HVs to do more to support quitting and relapse prevention but no specific work undertaken to date. The scope to engage other professionals/services to tackle SiP hasn't been explicitly developed, although the opportunity does exist through the integrated service. There isn't an intention to produce bespoke materials but there is scope to use national materials more widely. There is an interest in exploring how peer support might be introduced but this has not been taken forward as yet.

	models could help more young mothers to quit	
	The Government should introduce a national incentive scheme to support pregnant women to quit, learning from the best evidence on how to achieve success. Until a scheme can be put in place, they should proactively encourage local areas to introduce their own schemes in line with the evidence base	Introducing incentives would be difficult although there is recognition that national evidence indicates that financial incentives are effective.
	Commissioners need to ensure services are providing pregnant smokers with the right levels of NRT and supporting their choice to use e-cigarettes if that is their preferred way to quit.	The SiP service uses NRT as recommended, however, there are significant challenges in ensuring all services/clinicians are promoting the harm reduction potential of e-cigarettes.

Appendix 32 Public Health Assessment Framework (Warwickshire)

Warwickshire Public Health

Source	Standard	Assessment
SYSTEM-WIDE PARTNERSHIP WORKING		
CLeaR 1.6	Does SiP work feed into a Trust-wide smokefree NHS plan?	Recognised that this should be part of the council's wider Tobacco Control Plan (no current plan is in place) but SWFT's 2018 smokefree policy references SSIP. A GEH plan (2015-18) doesn't reference SSIP and it is reported through the SiP review that the Trust's plan is out of date. UHCW (Rugby) have reported through the review that SiP is reflected in the Trust-wide smokefree plan.
CLeaR 1.7	Is smoking in pregnancy addressed in local health improvement plans? For example at Health and Wellbeing Strategy and in CCG Strategic/Business Plans, Tobacco Control Plan, JSNA, Service delivery improvement plans, STP plans?	SiP is referenced in the Health & Wellbeing Strategy. Likewise, the LMS Plan 2019 refresh: Key performance indicators By March 2021 states: *100% of women are assessed and supported to stop smoking, manage their weight and address mental health and wellbeing needs, including domestic abuse* However, it is noted that the LMS postnatal plan does not include smoking. It is noted that the introduction of place-based JSNAs has reduced focus/attention on smoking. The smoking needs assessment (2016) explicitly excludes SiP but this will be addressed through planned development of the local TCP.
CLeaR 1.8	Has a smoking in pregnancy needs assessment or Health Equity Audit been completed?	WCC has commissioned a review with LMS transformation funds for this purpose (Findings available May 2020)
CLeaR 1.9	Do you understand the needs of all communities in relation to smoking in pregnancy within your defined geographical area?	Place-based data not readily available. Above review is expected to provide detailed picture of current needs, gaps and assets.
CLeaR 1.10	Has an audit of implementation of NICE guidance PH26 and PH48 (where relevant to maternity	The SiP review will include an audit against the standards in PH26. A request was made to Trusts to provide a brief update in

	provision) been undertaken? Is there an agreed action plan in place?	relation to implementation of PH48 but only UHCW (see appendix 26) and CWPT responded.
CLeaR 1.11	Do contracts for midwifery services specify actions to address smoking in pregnancy?	For CCG to address but understanding is the current specification is out of date (to be picked up with CCG/LMS)
CLeaR 1.12	Are local stop smoking services commissioned to provide interventions for pregnant women who smoke?	WCC commissioning specialist stop smoking in pregnancy service, which is embedded within the 0-5 Public Health Nursing Service Contract. Service to be recommissioned, as contract extension expires 31 March 2022.
DATA COLLECTION and MONITORING		
CLeaR 1.13	Is data on smoking at time of booking routinely collected and recorded? Is this monitored in relation to the number of referrals for specialist stop smoking support?	Yes, but data capture different. Badgernet SWFT, hardcopy and spreadsheet capture GEH & UHCW. Yes, but difficult to correlate numbers as different data systems/processes. To be picked up through SiP review in terms of future monitoring requirements.
CLeaR 1.14	Are there mechanisms in place to reduce the number of women with an 'unknown' smoking status at delivery recorded?	Trusts expected to do this. However there concerns about accuracy/reliability of the data. Reported that women may not be asked at delivery with booking smoking status recorded at delivery by default.
CLeaR 1.15	Is data on quit dates set and outcomes for pregnant women accessing stop smoking services monitored and reviewed on a regular basis?	Yes, through quit manager. Commissioner receives quarterly reports on this. Data received includes referrals.
CLeaR 1.16	Do you ensure that submitted SATOD data is validated and reliable?	WCC receive SATOD data from maternity Trusts. Expected that Trusts are responsible for data quality but there are concerns that the data is not reliable. Attempts to validate SATOD data through the data submitted for the SiP review (eg cross referencing with 36-week smoking status) will be undertaken.
CLeaR 3.5	Is there a process in place to review the effectiveness of pathways (including opt-out referral) and identify any blocks/barriers? What data is used to assess its effectiveness?	No, therefore have commissioned review to examine pathways and any variation between midwifery services.

CLeaR 3.8	Is a broad range of NRT products available on the ward for pregnant women who are hospitalised?	It is understood that NRT is not widely available although it is provided as part of the Risk Perception Intervention at SWFT and GEH confirm they provide NRT if it is prescribed. This needs to be picked up by CCG commissioners (ties into implementation of PH48).
COMMUNICATION		
CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	Not across all professional groups. Early findings from review suggest significant variation in confidence in delivering quality VBA. FNP and HVs are understood to be consistent in their messaging around SiP. The review process indicates a concern about consistency of messaging among some broader primary and secondary care clinicians. Particular issues and lack of clarity regarding messaging related to e-cigarettes.
CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	Yes, share SIP via social media, webpage (Quit4Baby) 0-5 PH nursing service, and SSIP service. However, need a place-based approach to challenge local social norms in areas of higher SIP prevalence. Commissioned Cov University to undertake behavioural insights work to improve messages, including development of webpages (quit4Baby) and use of lip balm. At the moment no investment in pre-conception messaging within Warwickshire.
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	Current review expected to inform future messaging and communications. Coventry University were monitoring outcomes of above work, but changes to team have impacted on this.
CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke, particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.	No, other than through SSIP service – recognising that they have limited insight from those not taking up the service. Behavioural insight work has previously been undertaken as referenced above. However, it is recognised that the views of pregnant smokers – especially those who do not engage with services will

		need to be sought as part of reconfiguration of services (ie reconfiguration will be necessary as part of NHS LTP investment).
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception services, family planning, nurse family partnerships and others?	Gaps in a coherent multi-agency approach to messaging and SSIP signposting. C&FC, HV and FNP trained / or about to be trained through NCSCT eLearning. Need to develop a place-based approach using local assets (hair dressers, schools, EY settings, housing etc). It is recognised that professionals working in primary care, sexual health and other preconception services have not been reached through work to date.
CHALLENGE GROUP RECOMMENDATIONS		
	Public Health England should work with local authorities to ensure that local strategies reduce rates of smoking among the most disadvantaged and that families who need to can access stop smoking support before, during and after pregnancy.	Specifications for the Current Children & Family Centres contact states: *"All customer-facing staff will be trained in Making Every Contact Count (within 3 months following recruitment), with a particular focus on those issues pertinent to families, such as smoking cessation, smoke-free environments and accident prevention". Discussions currently underway to include roll-out of NCSCT eLearning (e.g. Very Brief Advice in Smoking;* Second-hand smoke: promoting smoke free homes and cars) within 2020-21 workforce development programme.
	Public Health England and NHS England should support local leadership to tackle smoking in pregnancy through Local Maternity Systems and the promotion of Smokefree Pregnancy Champions in every local area.	Would be supportive of such a development (likely to be a recommendation through the review)
	Local authorities, CCGs and Trusts should explore ways to work collaboratively across LMS footprint to realise economies of scales in implementing NICE guidance on smoking in pregnancy	Will be looking for opportunities to do this through the review.

	Where smoking rates are high national and local government and NHS organisations should seek to better engage a wider group of health and care professionals in reducing rates of smoking in pregnancy, and to engage whole household not only pregnant women. Approaches should include: • Improve training to better engage with families who smoke • Supporting pilots to gain a better understanding of how a wider group of professionals, in particular Health Visitors, can motivate more parents who smoke to quit m • Engaging commissioners in efforts to explore how professionals can be best supported to deliver brief advice within existing contracts • Producing materials to support professionals in their engagement with families. m • Supporting pilot activity to better understand how peer support models could help more young mothers to quit	Recognise the need to focus around household smoking and SiP service do provide some support (ie support partners to quit). Need a 'place based' approach. There has been consideration of requiring C&FC staff to undertake e-learning in relation to smoking HVs do promote smokefree homes but could be opportunity to do more to support quitting and relapse prevention (no specific work on relapse prevention undertaken to date). The scope to engage other wider professionals/services to tackle SiP hasn't been explicitly developed. There isn't an intention to produce bespoke materials but there is scope to use national materials more widely. There is an interest in exploring how peer support might be introduced but this has not been taken forward as yet.
	The Government should introduce a national incentive scheme to support pregnant women to quit, learning from the best evidence on how to achieve success. Until a scheme can be put in place, they should proactively encourage local areas to introduce their own schemes in line with the evidence base	Introducing incentives would be difficult although there is recognition that national evidence indicates that financial incentives are effective.

	Commissioners need to ensure services are providing pregnant smokers with the right levels of NRT and supporting their choice to use e-cigarettes if that is their preferred way to quit.	The SiP service uses NRT as recommended and the service is e-cigarette friendly, however, it is recognised that access to NRT is not timely. There are significant challenges in ensuring all services/clinicians are promoting the harm reduction potential of e-cigarettes.

Appendix 33 LMS Board Assessment Framework

Source	Standard	Assessment
CLeaR 1.1	Do you have a local multi-agency smoking in pregnancy group with appropriate local leadership?	Since the inception of the LMS there has been a focus on SiP through the H&WB workstream. A T&F group has been established to increase the focus on SiP in recognition of the scope to strengthen the approach to SiP – particularly necessary in light of the 6% SATOD target. There is clinical leadership of the group and good engagement of partners, but a recognised need to look at providing project support to the group (to be considered in context of LMS/wider system priorities)
CLeaR 1.2	Is this well attended by the key decision makers and have any gaps been identified, with plans to address these?	Links to key decision-making groups within the Maternity Work Programme and wider ICS need to be established.
CLeaR 1.3	Has the group developed a smoking in pregnancy action plan with defined objectives? For example a reduction in SATOD and an increase in referrals and quits?	The current review will include recommendations collectively aimed at reducing SATOD through increased referrals and quits, as well as actions required elsewhere in the system (eg. through the Tobacco Control Strategy). These will need to be considered and prioritised by the LMS/wider ICS decision-making groups, and in light of this an action plan will be developed.
CLeaR 1.4	Are governance processes in place to monitor progress of the action plan? Are these governance structures effective?	The SiP T&F group is a subgroup of the H&WB workstream, which reports to the LMS Board. The LMS Board feeds into decisions of the wider ICS and SiP should be referenced in the maternity chapter of the 5-year operational plan. The extent to which the action plan will also need to feed into wider Tobacco Control/ICS Prevention work programmes needs to be clarified.
CLeaR 1.5	Does work on smoking in pregnancy feed into broader local maternity plans?	As above

CLeaR 1.7	Is smoking in pregnancy addressed in local health improvement plans? For example at Health and Wellbeing Strategy and in CCG Strategic/Business Plans, Tobacco Control Plan, JSNA, Service delivery improvement plans, STP plans?	The extent to which SiP feeds into CCG/ICS plans is described above. There are plans to ensure SiP is considered by local H&WB Boards/JSNA programmes and the refresh of Tobacco Control Plans (April meeting). Opportunities to link SiP to population wide approaches to addressing healthy lifestyles (such as through the promotion of the use of behaviour change apps) needs to be considered.
CLeaR 4.1	Do all health professionals who come into contact with pregnant women provide accurate and consistent messages on smoking, its harm, and options to quit?	The review is providing evidence of good practice, but also areas where the consistency of messaging can be improved – in particular through ensuring that all professional groups and staff in all clinical areas are prepared to discuss SiP and have the skills to do so.
CLeaR 4.2	Do you contribute to messaging specifically related to smoking in pregnancy either locally or supra-locally? An example would be making information readily available. Is this aimed at pregnant women and their families, as well as those planning pregnancy?	There is a recognised gap in terms of conveying messages around SiP (and other pregnancy risks) to those planning pregnancy – for SiP this should be explored as part of the wider targeted communications required in relation to population smoking (through Tobacco Control Plan).
CLeaR 4.3	Are there processes in place to review use of messaging and effectiveness of communication activity around smoking in pregnancy?	Periodic assessment is undertaken – for example through the current review.
CLeaR 4.4	Do you have mechanisms in place to understand the views of pregnant women who smoke, particularly those not engaging with specialist stop smoking service? For example, behavioural insight work.	Assessing the views of women not accessing services is outside the remit of the current review but should be built into the planning for any revised service model that might follow (for example by working through the MVP).
CLeaR 4.5	Do you have evidence of a multi-agency approach to positive messaging on the role of professionals in reducing smoking in pregnancy? For example, importance of referring, how to refer and benefits of quitting. Does this target a range of relevant professional groups, such as HCPs, pre-conception	The review provides some evidence that a range of services (some midwives, HVs, FNP and Specialist SiP services are providing consistent and appropriate messages. There is also scope to do more in terms of engaging all staff groups within maternity, primary care and the services potentially involved in pre-conception care.

	services, family planning, nurse family partnerships and others?	
CLeaR 4.6	Do you have evidence of a targeted approach to messaging around smoking in pregnancy and is this linked with pre-conception services, family planning, nurse family partnerships and others?	As above – a need for enhanced messaging specifically in relation to pre-conception services.
	Public Health England and NHS England should support local leadership to tackle smoking in pregnancy through Local Maternity Systems and the promotion of Smokefree Pregnancy Champions in every local area.	The LMS has demonstrated a commitment to reducing SiP through commissioning the SiP review. Recommendations from the review should include the identification and support of Smokefree Pregnancy Champions within different services, specific clinical areas and professional groups.
	Local authorities, CCGs and Trusts should explore ways to work collaboratively across LMS footprint to realise economies of scales in implementing NICE guidance on smoking in pregnancy	The SiP review process has benefitted from collective work across the LMS footprint – realising economies of scale, for example in relation to planning to meet the training needs of maternity staff.
	Where smoking rates are high national and local government and NHS organisations should seek to better engage a wider group of health and care professionals in reducing rates of smoking in pregnancy, and to engage whole household not only pregnant women. Approaches should include: • Improve training to better engage with families who smoke • Supporting pilots to gain a better understanding of how a wider group of professionals, in particular Health Visitors, can motivate more parents who smoke to quit m • Engaging commissioners in efforts to explore how professionals can be best supported to deliver brief advice within existing contracts	The LMS has invested in the SiP review so that the findings can be used across the system to reduce the number of women smoking before they get pregnant, support more women who do smoke after conception to quit, and reduce the number of women who relapse in the post-natal period. This will include the need to address skill gaps in terms of providing VBA (ie skills in motivational interviewing) and opportunities for PH and CCG commissioners to explore how any contractual levers might be used to enhance staff training/delivery of support to pregnant smokers, their family members and the wider communities in which they live (where smoking is often entrenched) The findings will also be used to inform a refresh of local Tobacco Control plans – enabling household/family smoking to be addressed. These will need to consider the potential for

	• Producing materials to support professionals in their engagement with families. • Supporting pilot activity to better understand how peer support models could help more young mothers to quit	targeted activity – including peer support approaches – to help support behaviour change among ‘high risk’ communities.

Appendix 34 Overview of Compliance with NICE: PH 26

PH 26 Standard	Review Evidence
Recommendation 1: Identifying pregnant women who smoke and referring them to NHS Stop Smoking Services – action for midwives	
Identify women who smoke	Maternity data analysis indicates that overall for 92% of bookings smoking status was recorded, although 2% of those either identified as a non-smoker or as having unknown smoking status at booking, went to be recorded as smokers at time of delivery (estimated to be approximately 19 women each year). In 2018/19 there was a higher proportion of women with an unknown smoking status at booking at GEH (14%), compared to UHCW (8%) and the lowest level was at SWFT (2%). It is however notable that the proportion of women with unknown smoking status at UHCW has increased over the review period from 3% to 8%.
Undertake CO testing	Evidence from electronic data indicates that a high proportion of women are CO tested, with improvement towards 100% over time. For 2018/19 the maternity booking records showed that 82% of UHCW records, 84% of SWFT's and 79% of GEH bookings had a CO measurement. Through the case note audit between 67% (UHCW) to 85% (SWFT and GEH) had a documented CO measurement at booking.
Provide information (for example, a leaflet)	There was a low level of documentation of provision of stop smoking in pregnancy written information in the case note audit at booking at both UHCW and GEH – at GEH (2%) and UHCW (12%) as compared to SWFT (87%)
Advise stopping – not just to cut down	Mixed evidence - Smoking advice at booking was documented for between 43% of smokers at GEH, 64% at UHCW and up to 85% at SWFT. In discussion groups it was reported that some staff do support cutting down but on balance the majority of staff do recommend complete cessation.
Refer all women who smoke (opt-out)	Evidence from electronic data indicates opt-out referrals are being made (ie number of referrals received by smoking services roughly equates with smokers at booking, although this may not be the case in Rugby) The case note audit showed that 61% of records at UHCW, 71% at GEH and 82% at SWFT had smoking referral documented. Through the staff survey 88% of community midwives reported consistently making referrals at booking. However, within discussion groups, some midwives and Health

	Visitors questioned the ethics of referring women without their consent (so may not be making 'opt-out' referrals).
Refer those with a CO reading of 7 ppm or above. (NB: threshold now changed to 4ppm)	The local guideline is to refer where the CO is 4ppm or above if the woman is thought to be a smoker and not if she strongly denies smoking and on balance is thought not to be a smoker. The maternity staff survey and discussions indicate that referrals at a threshold of 4pmm are being made.
Where high CO reading (more than 10 ppm) in non-smoker, advise on possible CO poisoning to call HSE gas safety advice line	There was some indication from maternity survey responses that all staff do not know all of the actions that should be taken when a CO value level is raised in a non-smoker – for example through the staff survey only 40% of midwives reported providing the gas safety number (see appendix 20 for detail).
Enquire and advise re: household smokers, signpost to NHS Stop Smoking Services	There is a relatively high level of documentation at booking in relation to partner smoking ranging from 65% at GEH, 79% at UHCW to 83% at SWFT but low levels of signposting partners to smoking cessation support
Re-refer at subsequent appointments and re-measure/record CO reading	Evidence from the case note review indicates that this is happening but not consistently - at subsequent appointments smoking status was documented on at least one more occasion (prior to 36-weeks) for 74% of records at UHCW, 83% at GEH through to 100% of records at SWFT and it was documented on average between 2 to 3.1 occasions across the Trusts. The proportion of smokers at booking who had a repeat CO measurement (prior to 36 weeks) ranged from 29% of women at UHCW, 53% at GEH and 94% at SWFT
Recommendation 2 Identifying pregnant women who smoke and referring them to NHS Stop Smoking Services – action for others in the public, community and voluntary sectors – action for GPs, practice nurses, Health Visitors and family nurses. obstetricians, paediatricians, sonographers and wider maternity team. Staff in youth and teenage pregnancy services, children's centres and social services	
Use any appointment to advise women if they smoke	For HVs there is evidence that advice was given at antenatal visits There were generally high levels of documentation of smoking status at the New Birth Visit (41% to 84%) as opposed to at the 6-8-week review (34% to 60% for the services providing 6-8-week information)A higher proportion of women at the NBV (38% to 100%) than at the 6-8-week review (20% to 50%) had smoking advice documented. In FNP services smoking status is documented for between 75% to 100% of clients at first assessment
Refer all women who smoke to SSiP services	For HVs the recorded evidence indicates generally low levels of referral by Health Visitors to smoking services for pregnant smokers (with the exception of South

	Warwickshire – 56%). In FNP services there was generally low levels of referral to specialist support beyond the first assessment, although it was documented that advice given. SSiP service data indicates that HVs do make referrals in Warwickshire, but 99% of Coventry SSiP referrals are from midwives. This conflicts with the case note review evidence indicating that Coventry HVs do refer to SSiP services. Only 16% of Children's Centre staff reported that they would refer to SSiP services, but they would sign-post smokers to their GP or midwife.
Provide information (for example, a leaflet)	There were generally low levels of documentation relating to the provision of written information by HVs but through the FNP case note audit it was documented that written information was provided for 94% to 100% of first assessment visit records and 60% to 94% of subsequent visits.
Enquire and advise re: household smokers, signpost to NHS Stop Smoking Services	There was documentation of enquiry about household smoking in a substantial proportion of the antenatal visits (63% to 86%, with the exception of Rugby records (29%)) but low levels of evidence of sign-posting to smoking cessation support for household smokers. In FNP services there were generally low levels of signposting of partners to stop smoking support. The staff survey indicated that between 75% and 82% of HV service staff considered providing advice about second-hand smoke exposure to be very important
Recommendations 3 to 7 apply to NHS Stop Smoking Services	
Compliance with standards is detailed in appendices 9, 29 and 30	In summary standards are met with the exception of referrals actioned within 24 hours of receipt and face to face appointment offered within 7 days. Local standards are response within 2 working days and appointment within 2 weeks. The services are not commissioned to provide support to women with infants up to one year – (ie appointments up to 3 months postnatal only)
Recommendation 8 Training to deliver interventions (provided to all midwives GPs, practice nurses, Health Visitors, obstetricians, paediatricians, sonographers, midwives (including young people's lead midwives), family nurses and children's centre staff among others **Action by Commissioners of NHS Stop Smoking Services, Maternity services. Other bodies with training responsibilities**.	
Ensure midwives are trained to assess smoking status and readiness to quit	Across the maternity services 25% of respondents reported that they had never been trained, as did 37% of antenatal staff, 64% medical professionals, 67% of sonographers, 69% of support workers, 57% of GP practice staff and 60% of children and family centre staff. 42% of health visiting staff appeared to have received training

	within the last year This was higher in South Warwickshire at 75%, compared to 45% in North Warwickshire and only 2% in Coventry. Staff would value additional training with some Health Visitors and hospital midwives favouring additional face-to-face training, whilst junior doctors also felt motivational interviewing training would help
Provide information (for example, a leaflet)	There were low levels of recording that written information was given, although in discussion groups staff did indicate that they provide leaflets.
Enquire and advise re: household smokers, signpost to NHS Stop Smoking Services	As above there is variable evidence in relation to household smoking and sign-posting across services and staff groups, indicating a need for additional training.
Understand barriers to quitting how to refer them to local services for treatment	In the staff survey when asked if they had all the knowledge required to talk to pregnant women about smoking in pregnancy only 52% of midwifery staff agreed or strongly agreed with the statement. 58% of sonographers and 46% of support workers strongly disagreed with the statement – indicating that they lack the required knowledge and most likely do not have a good appreciation of the barriers. 25% of Children Centre staff reported a lack of confidence to discuss smoking, as did 26% of General Practice staff. Furthermore 31% of General Practice staff reported having insufficient knowledge to advise on smoking in pregnancy.
Know how to refer to SSiP services	In terms of familiarity with the SSIP referral process while 70% of midwives said they were clear about the process this varied with 91% of community staff answering positively compared to 45% of antenatal and 47% of postnatal staff. 72% of health visiting staff indicated that they knew the referral process but only 7% of GP practices staff said they would refer to the SSIP service. Lack of knowledge about the referral process was reported in the staff survey as a considerable barrier for both maternity staff in general (15%) and for health visiting staff (9%). Only 16% of Children's Centre staff report referring to SSiP services.
Be able to advise on the treatments to aid quitting	All staff groups expressed a need for increased knowledge around e-cigarettes and NRT; less than 5% of staff had sufficient knowledge about NRT and only 3% of staff felt confident to advise about e-cigarettes.
Be trained in brief skills to initiate a referral	In terms of expressing confidence in engaging pregnant women with discussion about smoking, 11% of maternity staff strongly agreed that they had all the confidence they needed, 40% agreed, 18% disagreed and 9% strongly disagreed (ie 27% of maternity

	lack confidence to have the conversation. Those confident would be assumed to have the required skills.
Be trained in the use of CO monitors	The proportions of maternity staff trained to undertake CO monitoring ranged from 90% of those working in the community to 46% of antenatal staff and 48% of postnatal staff. By profession, 92% of sonographers, 89% of other medical staff and 62% of support workers reported not receiving CO training. Overall 30% of all survey respondents said they would not be confident to discuss a CO reading, indicating a need for training.
Trained to understand the barriers professionals may face in tackling smoking (eg damage to relationship)	In the staff survey concern about the future relationship with the patient was more of a barrier for health visiting staff (12%) than maternity staff (10%), although 18% of community midwifery staff felt this to be a barrier – indicating that more training is required in relation to this.

Appendix 35 Policies in NHS Trusts – PH48 Standards

PH 48 Standard	Evidence through review
Clinical or medical director lead identified for Smoking Cessation/Smokefree policy development	Yes, at UHCW Understood to be no at GEH and SWFT
Smokefree policies in place	Yes, at UHCW and SWFT. Policy in agreed at GEH but understood to be out of date.
An Annual Improvement Plan relating to smoking cessation (eg by clinical area) is developed	No
On-site smoking cessation service provided	Yes, at UHCW but limited service for Coventry residents only. Individual outside of Coventry is appropriately signposted Understood not to be in place at SWFT and GEH
Electronic referral system in place from Trust to local smoking cessation provider(s)	Yes, at UHCW Understood no at SWFT and GEH
Provision of full range of NRT/pharmacotherapies (short and long-acting NRT products plus bupropion and varenicline)	At UHCW only nicotine patches currently as in patient. Vouchers are offered on discharge for other NRT Very limited provision understood to be in place at SWFT and GEH with limited prescribing of products.
Provision of staff training in smoking cessation and/or MECC	Yes at UHCW via cascade trainers. Plans to include this in induction programmes going forward No information provided by SWFT and GEH
Are staff provided with support/access to Stop Smoking Services?	Yes, at UHCW 1:1 support offered where possible Understood to be no (or very limited provision) at SWFT and GEH.
Is information and advice in relation to smoking/smoking cessation available to patients, carers, families and others in the hospital environment.	Yes, at UHCW there are posters and business cards in all areas. No information provided by SWFT or GEH.

Appendix 36 Actions Required to Meet Recommendations

Relevant to LMS/System

Note 1 – LMS leadership, Governance and Service Specification

1. Constitute an effective LMS smoking in pregnancy steering group, including key decision-makers, to replace the T&F group with clear lines of accountability to LMS Board and wider Health and Care Partnership Board

2. Appointment a dedicated LMS lead for smoking in pregnancy (2 year post) and work with partners to develop a revised service model based on local needs/recommendations and in light of NHS investment in smoking in pregnancy services. To include implementation of a BabyClear approach (see appendix 37)

3. Working through the MVP and other partners – access the views of pregnant smokers who do not currently take up the offer of specialist support to inform the future service model

4. Work with CCGs to raise the profile of smoking in pregnancy and develop a revised maternity service specification/contract that includes adherence to NICE/SBL guidance and standards – including Trust responsibility to fund CO monitors and disposables.

5. LMS/Public Health/CCG Commissioners work with providers to agree revised quarterly monitoring data that allows progress/issues to be monitored across the system. Could also include more detailed annual report and audits (would need to tie into the role of the Smoking Cessation lead midwife specified below and with data that can be provided by SSiP services). See example in appendix 39 for monitoring data.

6. Work with CCGs and other partners (eg. HEE) to identify and meet the training needs of Primary Care clinicians.

7. Work with HEE, local maternity services and local training providers to ensure midwives in training develop the necessary knowledge and skills to address SiP

8. Contribute to work with partners to reduce smoking/improve lifestyles through enhancing pre-conception care. See appendix 38 for details.

9. Consider the potential impact of differential investment in maternity services and how this might be addressed to ‘level up’ the delivery of care consistent with guidance, including high quality VBA and referrals

Relevant to Maternity Services

Note 2 – New Service Model (based on BabyClear) Delivering NICE PH26 and SBLCB

1. Working with commissioners/SSiP providers/LMS should develop a new model for smoking in pregnancy support, based on the BabyClear model, to incorporate future NHSE smoking in pregnancy investment. New model to include:

- Rapid access to specialist advice (ie within antenatal clinic where possible – (eg through input from trained MSW)) and/or with referrals being made at the time of initial assessment (eg. through a phone call at booking clinic to the SSiP service)
- Access to NRT at booking clinic or as soon as possible thereafter
- Contact with the woman within 1 day of receipt of referral (ie by the SSiP service) with face to face appointment within one week (as per NICE/NHS Challenge group recommendations)
- Full adherence with NICE PH26 guidance and SBLCB guidance across all clinical groups/service areas

2. Appoint a Maternity Service Smoking Cessation lead midwife post (this might be part of NHSE spec) to secure maternity service-wide implementation of NICE/SBLCB guidance and NHS Challenge Group recommendations ensuring all staff are aware of the importance of smoking in pregnancy and make referrals to specialist support. See appendix 38 for example of potential role.

3. A business case for the delivery of the Risk Perception Intervention needs to be developed so, if approved, there can be uniform provision of RPI by all maternity services

4. Need to consider options to develop capacity in maternity booking clinics/and or scan clinics so smoking in pregnancy (and other key issues) can be explored in more detail. The role of Maternity Support Workers should be developed in these settings.

5. NRT should be prescribed in all clinical areas across maternity services and should be available from the hospital pharmacy (as per NICE guidance).

6. Maternity services need to consider ways of 'cohorting' smokers so scarce specialist resources can be targeted in clinics with a high throughput of smokers.

7. All Trusts should implement SBL recommendation including scans for Fetal Growth Restriction (for smokers at booking serial growth scan every 4 weeks from 32 weeks)

8. Promote notification of pregnancy to HV service – to include smoking history

9. Improve data quality (likely to be a finding that data items are missing etc) eg. at booking, 36 weeks and at time of delivery…and documentation of advice given (again expect this to be an issue)

10. Contribute to enhanced data monitoring requirements as agreed through LMS-wide approach (see appendix 40)

Note 3 – Ownership by all Maternity Staff, Training – Implementing PH26 /SBLCB

1. Smoking in pregnancy needs to a priority for ALL maternity staff…with more widespread CO monitoring/referrals etc. In particular need to embed repeat CO checking at antenatal appointments and offer of re-referral to SSiP service

where a woman hasn't accessed the service. CO testing should be incorporated into 'routine observations' so included on all admission/assessment clinic visits.

2. Identify and train 'Stop Smoking in Pregnancy Champions' across all clinical areas and within all professional groups in maternity to embed CO monitoring/VBA and making referrals everyone's responsibility. Champions would not necessarily need to be midwives and incentives to encourage the role need to be considered (eg 2 hours per week of time to develop role)

3. Training for all maternity staff (incl obstetricians sonographers etc), in motivational interviewing so everyone is more skilful and confident in delivering VBA. Also, more widespread training in relation to CO monitoring/NRT/e-cigarettes etc. Need to think of best ways of providing access to training bearing in mind challenges in releasing staff. VBA and referral needs to be standard practice in Fetal Wellbeing, Early Pregnancy Assessment Unit, Triage, Fetal Medicine clinics, NICU/SCBU and through the work of Research Midwives.

4. Consider how frontline staff might be provided with supervision to enhance their VBA skills - – part of Maternity Service Smoking Cessation lead role

5. Consider need to promote use of the 'script' included in the LMS guideline (see appendix 41) – part of Maternity Service Smoking Cessation lead role

6. All referrals to SSiP services should be electronic (and made at the time smoking is identified) and must consistently be opt-out referrals.

7. Promote more widespread identification of partner/household smoking with more consistent advice/sign-posting from all professionals

8. Standardise the information given to women (eg. dangers of smoking in pregnancy, CO monitoring, e-cigarettes) in light of professionals need to give information but women's feedback about futility of leaflets.

Relevant to Specialist Smoking in Pregnancy Service
Note 4 – Improve Service Efficiency and Access

1. With commissioners consider how the training needs of Specialist Stop Smoking Advisors (eg. mindfulness, meeting the needs of those with MH problems, substance misuse) can be met

2. Increase efficiency of the service/use of specialist time through the introduction of administrative capacity within services

3. Work with commissioners and maternity services to achieve NICE service standards

4. Consider if there is scope for enhanced partnership with 3rd sector organisations to increase engagement of the most vulnerable groups

Relevant to HVs/FNP

Note 5 – Enhance Implementation of PH 26

1. Use universal contacts to promote smoking cessation/referral to SSiP services for pregnant smokers and seek to enhance relapse prevention for quitters through antenatal, early postnatal and other contacts

2. Promote more widespread identification of partner/household smoking with more consistent advice/sign-posting from all professionals to SSiP and other lifestyle services, ensuring all staff have the necessary training, skills and resources

3. Identify and train 'Stop Smoking in Pregnancy Champions' across all service areas including all disciplines/grades of staff building on existing commitments to NCSCT on-line training re: smoke-free homes and smoke free cars

Note 6 – Data Collection and Monitoring

1. Improve data quality and documentation of advice given

2. Consider monitoring requirements and links to smoking in pregnancy and child development

Relevant to Public Health

Note 7 – Investment to reduce smoking

2. Develop options and an options appraisal framework to secure investment in wider Tobacco Control activities/smoking cessation in the context of the NHS LTP and/or specific investment in approaches to reduce smoking in pregnancy

3. Develop a communications/dissemination plan for the smoking in pregnancy review/investment options so key partners across the Health and Care Partnership can commit to investing in Tobacco Control/smoking in pregnancy. Dissemination plan to include Health and Wellbeing Boards and key decision-making boards within the Health and Care Partnership

Note 8 – Wider Tobacco Control Plans

1. PH depts should consider the scope to do more to reduce smoking rates particularly among young adults through enhanced implementation of NICE guidance preventing uptake in young people (PH23) and Smoking: preventing uptake in children and young people (PH14) – as part of wider Tobacco Control Plans.

2. Consider the place of targeted place-based initiatives to reduce smoking among young adults in 'hot-spot' areas, also considering the potential contribution of e-cigarettes and incentives (working with other partners such as education, employers and Housing Associations), using asset based, social mobilisation and other innovative techniques as appropriate.

3. As part of wider Tobacco Control Plans support Trusts to fully implement PH48 (linked to Long-term Plan prevention commitment in relation to smoking)

4. Ensure pathways to wider SSS (wider population) are clear and well developed so all professionals are able to sign-post partners and other household members to support.

5. Develop opportunities to reduce smoking/improve lifestyles through enhancing pre-conception care. See appendix 38 for details.

Note 9 – Smoking in pregnancy– Targeted Community Interventions and Role of Commissioned Services

1. Consider the potential for targeted 'peer support' initiatives/campaigns, the potential contribution of VOKE, e-cigarettes, digital interventions and incentives among pregnant smokers in 'higher risk'/hot-spot areas – building on local assets

2. Consider if the role of Children and Family Centres/Family Hubs can be enhanced through training/access to resources to enable increased VBA to families and increased referrals to specialist support

3. Plan capacity/investment required in SSiP services to meet needs of increased referrals, bearing in mind NHS investment and improved processes delivered through revised model. (include impact of meeting NICE recommendations contact from a specialist within 24 hours, appointment in first week and consider how relapse prevention might be enhanced)

4. Work with HV services to enhance their offer around smoking cessation – utilising universal and other contacts to promote smoking cessation, reduce household smoking, support relapse prevention and consider the case for targeted CO monitoring in higher smoking prevalence areas. Seek to increase referrals to SSiP in the antenatal and early postnatal period and increase sign-posting of other household smokers to SSS.

5. Work with SSiP, maternity and HV services to agree routine data items that should be shared routinely to enable assessment of outcomes (eg links between smoking in pregnancy and school readiness)

6. Raise profile of smoking in pregnancy, its consequences (mortality and morbidity across the life course) and costs with all partners through Health and Wellbeing Boards.

Appendix 37 Overview of BabyClear Approach

The BabyClear approach has been demonstrated to more than double referrals to SSiP services and to double the number of successful quitters. Evaluation of the programme in the North East indicates that success depends on:

- Implementing a 'whole system approach' with full commitment from strategic leaders within maternity services and the wider Trust.
- The appointment of a 'smoking cessation lead midwife' to provide leadership to all clinical areas within maternity services, liaison with SSiP services and other partners and to take responsibility for revision to maternity procedures and pathway development such that smoking cessation support is maximised.

Within maternity service the BabyClear approach ensures delivery of:

- CO screening for all pregnant women at booking
- An opt out referral system
- Training and briefing sessions for midwifery staff and other relevant health professionals so that all staff are able to undertake CO monitoring and deliver VBA
- Protocols and care pathways reflecting the evidence base and NICE guidance
- Advanced skills training to support Stop Smoking Advisors within maternity services (eg. Maternity Support Workers) to work effectively with pregnant women
- Ways to reach out to those pregnant smokers who currently do not engage with the Stop Smoking Services, including a Risk Perception Intervention.

Maternity services need to work with other partners, including SSiP services, who should incorporate:

- Administrative / call centre staff training to increase the number of women accepting appointments
- Awareness raising and engagement with all health professionals involved with pregnant smokers
- Supporting materials developed with the contribution of young pregnant smokers.

The whole BabyClear system requires:

- A performance management system
- Monitoring and evaluation of effectiveness

Provisional Role of Smoking Cessation Midwife

In the context of a BabyClear approach the Smoking Cessation Midwife will:

- Oversee delivery of a functional pathway from maternity service to SSiP service and receive feedback from SSiP provider on non-attenders
- Promote the importance of smoking in pregnancy to all staff working in maternity services – ensuring CO monitoring, VBA and referrals are everyone's business (wards and assessment units and all professional groups)

- Develop and co-ordinate the role of smoking in pregnancy champions in each clinical area/professional group, promoting compliance with NICE/SBL guidance by all staff
- Develop means of ‘cohorting’ smokers for the efficient deployment of specialist advice/delivery of the RPI
- Develop system for delivery of RPI – ideally at 12-week scan (or before). Potentially deliver the RPI as part of lead smoking cessation role.
- Feedback to individual staff where non-compliance is apparent
- Lead on identification of staff training needs in relation to smoking in pregnancy and work with Trust/LMS colleagues to ensure needs are met
- Sign up as member of Smoking in Pregnancy Challenge Group information network and disseminate advice and resources to smoking in pregnancy champions/wider staff groups
- Check and act on data quality
- Produce reports, undertake audits
- Ensure senior team within maternity service and Trust Board receive regular reports on
- Compare Trust performance on smoking in pregnancy with ‘peer’ Trusts (should be enabled through national MDS)

Appendix 38 Pre-Conception Care

Consider role of:
School nurses, Sexual health services, Fertility clinics, Practice Nurses, Family centres/hubs/early years, Health Visitors (planning for pregnancy), Secondary/Tertiary NHS Settings and services (non - maternity), Primary Care, and Maternity Voice Partnerships

The Challenge report recommends that to deliver this support, all services mentioned must have information on:

- The harms of smoking during pregnancy and importance of quitting;
- The local stop smoking support offer available and how women and their families can access this support;
- The training available, for example via the National Centre for Smoking Cessation and Training (NCSCT) and e-learning for healthcare, on very brief advice.
- Planning a pregnancy resources developed by Tommy's for women and families.

Key questions:

- Has your LMS identified local services working with women pre-conception that could deliver brief interventions?
- Have healthcare practitioners working with women pre-conception, such as those providing sexual health or contraception services, been trained to deliver advice around the harms of smoking and support to stop?
- What stop smoking support is available for women pre-conception? Do identified services refer into this support?

Appendix 39 Quarterly Routine Monitoring Data

Maternity Services

At Time of Booking
Number of bookings per quarter by District of Residence

Of bookings number (%) who are:
- Smokers
- Non-smokers
- Quit since became pregnant
- Unknown

Of bookings number (%) who have:
- CO measurement undertaken
- CO measurement >=4ppm
    - CO measurement >=4ppm and smoker
    - CO measurement >=4ppm and non- smoker

For all smokers at bookings by District of Residence:
- Number (%) referred to SSiP
- For referrals number (%) made on same day as assessment

At Subsequent Appointments
Number of referrals made in quarter at times other than at booking (not sure if/how this could be captured – possibly from smoking provider??)

At 36 Weeks
Number of women assessed at 36 weeks in the quarter. Of the total the number (%) who were identified as:
- Smokers
- Non-smokers
- Unknown

Number (%) of 36-week assessments who have:
- CO measurement undertaken
- CO measurement >=4ppm
    - CO measurement >=4ppm and smoker
    - CO measurement >=4ppm and non- smoker

For all smokers at 36 weeks by District of Residence:
- Number (%) referred to SSiP

At Time of Delivery
Number of women who delivered in the quarter. Of the total the number (%) who were identified as:
- Smokers
- Non-smokers
- Unknown

Number (%) of 36-week assessments who have:

- CO measurement undertaken
- CO measurement >=4ppm
    - CO measurement >=4ppm and smoker
    - CO measurement >=4ppm and non- smoker

Smoking Service Data

For Current Quarter

Number of referrals received per quarter by District of Residence
Number of referrals contacted within 1 day of receipt of referral (2 days, 3days and one week, number over 1 week)
Number of referrals seen face to face (or receiving telephone intervention) within 1 week of referral (2 weeks, 3 weeks over 4 weeks)
Of referrals received in the quarter, number setting a quit date
Of referrals received in the quarter who set a quit date – number and % quitting
Of successful 4-week quitters – number and % CO verified

For Year to Date

By quarter and total year to date:
Number of referrals received each quarter and total YTD by District of Residence
Number of referrals contacted within 1 day of receipt of referral (2 days, 3days and one week, number over 1 week) each quarter and total YTD
Number of referrals seen face to face (or receiving telephone intervention) within 1 week of referral (2 weeks, 3 weeks over 4 weeks) each quarter and total YTD
Of referrals received number setting a quit date each quarter and total YTD
Of those who set a quit date – number and % quitting each quarter and total YTD
Of successful 4-week quitters – number and % CO verified each quarter and total YTD

HV Service Data

The precise detail of the monitoring required will need to be agreed through commissioners and service providers, based on consideration of the following

- Total number of antenatal notifications received from midwives by DoR
- Number with notifications received with smoking status recorded
- Number of face to face antenatal contacts (28 week) made
- Of 28-week antenatal contacts made – number recorded as smokers
- Number of referrals to SSiP service for antenatal contacts
- Smoking status of partner at antenatal contact and signposting to support
- Smoking status of women of women who quit in pregnancy (and partners) at new birth visit and referral s made
- Smoking status of women who quit in pregnancy at 6-8 weeks postnatal
- Smoking status of women of women who quit in pregnancy at 9-12 months

Need to consider how data sets can be linked to include relationship between smoking in pregnancy and outcomes – eg strengthening approaches to relapse prevention and/or demonstrating links between LBW/Preterm in maternity and/or links to school readiness in 0-5 services.

Appendix 40 'Script' for Midwives

Warwickshire Stop Smoking in Pregnancy Service

Script for Midwives at 1st Booking - Carbon Monoxide (CO) test.

NOTE:

CO testing is part of a pregnant woman's routine antenatal care. The CO reading should be carried out at 1st booking appointment before asking smoking status.

Test/Ask/Refer

Introduction to test

"We test all pregnant women for carbon monoxide. Carbon monoxide is a poisonous gas and is very harmful to you & your baby. It is present in exhaust fumes, faulty gas appliances and cigarette smoke. This machine measures the amount of carbon monoxide in your lungs. You will be given the result instantly. You will need to hold your breath for about 15 seconds. After you have taken your breath I will hand the machine to you, the machine will count down and I will then tell you when to exhale into it."

Taking the CO Test

"Take a short breath out, now I'd like you to take a nice big breath in (Turn on monitor as you say this to start the countdown, keep talking to the woman " ... well done ... keep holding your breath, and after the 3rd beep seal your lips around the tube and blow out slowly until you have no breath left." Hand CO monitor to woman just as the countdown has a few seconds left.

Discussing the result

Before discussing the result - **Ask "**do you or anyone else in your household smoke?"

0-3ppm (and /or Green indicator on CO monitor)

If the woman says she is a non-smoker say:

"That is great, you have a normal CO reading and that means your baby is safe from the dangers of high levels of Carbon monoxide" No referral required

If the woman admits to being a smoker but blows a green (low CO) reading say:

"Any cigarettes you have from now on will cause the level of carbon monoxide to rise quickly and your baby will then be at risk. Each cigarette deprives your baby of oxygen for up to 20 minutes. Your baby's heart has to beat harder and faster because of this"

4ppm and above- (and /or Orange/Red indicator on CO monitor)

If the woman says she is a smoker say: I am very concerned about your reading, this level of carbon monoxide is harmful to you and your baby. Your baby's growth and development could be affected. Each cigarette deprives your baby of oxygen for up to 20 minutes. Your baby's heart has to beat harder and faster because of this and your baby's health is at risk.

Refer all women who say they are smokers with any reading:

Advise her that you automatically refer all smokers to the Specialist Advisor so they can have a further chat about their smoking and discuss the options available to them.
Complete quit manager on line referral form https://warwickshireqm.co.uk or call 07917 227004.

If the woman says she is a non-smoker with a red/orange reading
Use this opportunity to raise the issue of second-hand smoke. For partners and others who smoke offer a referral to the general stop smoking service if appropriate. There are other possible reasons for this high reading which need to be ruled out either:
1. exposure to carbon monoxide fumes from a faulty gas boiler, car exhaust or from paint stripper (it might be worth client checking these things out as exposure to carbon monoxide is dangerous); the National Gas Helpline number 0800 111 999 should be given at this point. It is a free phone number with a 24 hour helpline. Deaf or hearing impaired and have a Minicom or Textphone the number to call is **0800 371 787**
2. If she is lactose intolerant (most people know if they are) the high reading is a consequence of her consuming dairy products which can produce gases in your breath that affect the CO reading. Tell her you will re-test her at her next appointment.

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